ORDER NO. SD7706-1238

Service Manual

FM/AM STEREO RECEIVER

SA-5270

(XA), (XAL), (XE), (XGF), (XSW), (XG), (XGH), (XSD)

SA-5270K

(XSW), (XG), (XGH), (XSD) (XGF)

* This photo shows only the products for [XA] and [XAL]

* This photo shows the products for other destinations except (XA) and (XAL).
* SA-5270K is different in appearance and colour-tone.
* Cabinet colour differs according to area.

* The model SA-5270 (XA) is available in Asia, Latin America, Middle East and Africa only.
* The model SA-5270 (XAL) is available in Australia only.
* The model SA-5270 (XE) is available in England only.
* The model SA-5270/K (XGF) is available in France only.
* The model SA-5270/K (XSW) is available in Switzerland only.
* The model SA-5270/K (XG) is available in European only.
* The model SA-5270/K (XGH) is available in Holland only.
* The model SA-5270/K (XSD) is available in Scandinavia only.

TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

[DIN 45 500]

AMPLIFIER SECTION

1 kHz continuous power both channels driven	2 x 44 W (4Ω), 2 x 38 W (8Ω)
20 Hz~20 kHz continuous power both channels driven	2 x 39 W (4Ω), 2 x 35 W (8Ω)
40 Hz~16 kHz continuous power both channels driven	2 x 39 W (4Ω), 2 x 35 W (8Ω)
Power bandwidth both channels driven at 4Ω, 8Ω	7 Hz~50 kHz, −3 dB
Total harmonic distortion	
rated power at 1 kHz	0.3% (4Ω, 8Ω)
rated power at 20 Hz~20 kHz	0.3% (4Ω, 8Ω)
rated power at 40 Hz~16 kHz	0.3% (4Ω, 8Ω)
−26 dB rated power at 1 kHz	0.2% (4Ω)
50 mW power at 1 kHz	0.2% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8000 Hz=4:1, 4Ω	0.3%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.3%
Damping factor	16 (4Ω), 32 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47 kΩ
AUX, TAPE 2 PLAYBACK	150 mV/33 kΩ
TAPE 1 PLAYBACK, REC/PLAY input	180 mV/39 kΩ

PHONO maximum input voltage (1 kHz, RMS)			130 mV
S/N			
rated power PHONO			65 dB (IHF, A: 78 dB)
AUX			80 dB (IHF, A: 95 dB)
−26 dB rated power	**PHONO**	55 dB,	**AUX** 55 dB
50 mW power output	**PHONO**	55 dB,	**AUX** 55 dB
Frequency tesponse	**PHONO**	RIAA standard curve	±0.5 dB
	AUX	20 Hz~20 kHz,	±0.5 dB
		10 Hz~45 kHz,	−1 dB
Tone controls	**BASS**	50 Hz, + 10 dB~− 10 dB	
	TREBLE	10 kHz, + 10 dB~− 10 dB	
Loudness control (volume at −30 dB)		50 Hz, + 10 dB	
Output voltage	**TAPE 1, 2 REC OUT**		150mV
	TAPE 1 REC/PLAY output		30mV
Channel balance (250 Hz~6300 Hz)			±2.0 dB
Channel separation at 1 kHz			55 dB
Headphones level and output impedance			400 mV/ 330Ω
Load impedance	**MAIN or REMOTE**		4~16 Ω
	MAIN + REMOTE		8~16 Ω

National Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

FM TUNER SECTION (DIN 45 500)

Frequency range		88~108 MHz
Antenna impedance		300Ω (balanced), 75Ω (unbalanced)
Sensitivity (±40 kHz deviation)		1.9 μV (IHF: usable)
		20 μV (IHF, S/N 46 dB, 75Ω, STEREO)
		1.9 μV (S/N 30 dB, 300Ω)
		1.7 μV (S/N 26 dB, 300Ω)
		1.5 μV (S/N 20 dB, 300Ω)
		1.3 μV (S/N 30 dB, 75Ω)
		1.2 μV (S/N 26 dB, 75Ω)
		0.9 μV (S/N 20 dB, 75Ω)
Total harmonic distortion	**MONO**	0.15%
	STEREO	0.3%
S/N (±40 kHz deviation)	**MONO**	58 dB (IHF: 75 dB)
	STEREO	55 dB (IHF: 70 dB)
Frequency response		20 Hz~14 kHz, ±1.5 dB
Alternate channel selectivity (400 kHz)		70 dB
Capture ratio		1.5 dB
Image rejection at 98 MHz		65 dB
IF rejection at 98 MHz		80 dB
Spurious response rejection at 98 MHz		80 dB
AM suppression		55 dB
Stereo separation	**1 kHz** 45 dB,	**10 kHz** 35 dB
Leak carrier	**19 kHz** −35 dB,	**38 kHz** −45 dB
Limiting point		1.2 μV
Bandwidth	**IF amplifier**	250 kHz
	FM demodulator	1000 kHz
Channel balance (250 Hz~6300 Hz)		±1.5 dB

AM TUNER SECTION

Frequency range	525~1605 kHz
Sensitivity	30 μV: 300 μV/m
Selectivity	30 dB
Image rejection at 1000 kHz	45 dB
IF rejection at 1000 kHz	40 dB

GENERAL

Power consumption	400 W
Power supply (50 Hz/60 Hz)	110 V/120 V/220 V/240 V
	220V/240V (For United Kingdom)
	240 V only (For Australia)
Dimensions (W x H x D) for [XA, XAL]	
	458 x 147 x 295 mm (18 1/32" x 5 25/32" x 11 5/8")
Dimensions (W x H x D) Except for [XA, XAL]	
	420 x 142 x 295 mm (16 17/32"x 5 19/32"x 11 5/8")
Weight, for [XA, XAL]	9.0 kg (19.8 lb.)
Weight, Except for [XA, XAL]	8.0 kg (17.6 lb.)

TECHNISCHE DATEN (DIN 45 500)

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

VERSTÄRKERTEIL

RMS-Dauertonleistung bei 1 kHz		
beide Kanäle zusammen ausgesteuert		2 x 44 W (4Ω)
		2 x 38 W (8Ω)
RMS-Dauertonleistung bei 20 Hz ~ 20 kHz		
beide Kanäle zusammen ausgesteuert		2 x 39 W (4Ω)
		2 x 35 W (8Ω)
RMS-Dauertonleistung bei 40 Hz ~ 16 kHz		
beide Kanäle zusammen ausgesteuert		2 x 39 W (4Ω)
		2 x 35 W (8Ω)
Leistungsbandbreite		
beide Kanäle ausgesteuert bei 4Ω, 8Ω		7 Hz ~ 50 kHz, −3 dB
Harmonische Verzerrungen		
Nennleistung bei 1 kHz		0.3% (4Ω, 8Ω)
Nennleistung bei 20 Hz ~ 20 kHz		0.3% (4Ω, 8Ω)
Nennleistung bei 40 Hz ~ 16 kHz		0.3% (4Ω, 8Ω)
−26 dB Ausgangsleistung bei 1 kHz		0.2% (4Ω)
50 mW Ausgangsleistung bei 1 kHz		0.2% (4Ω)
Intermodulationsverzerrung		
Nennleistung bei 250 Hz: 8000 Hz=4:1, 4Ω		0.3%
Nennleistung bei 60 Hz:7 kHz=4: 1, 8Ω		0.3%
Dämpfungsfaktor		16 (4Ω), 32 (8Ω)
Eingangsempfindlichkeit & Impedanz		
PHONO		2.5 mV/47 kΩ
AUX, TAPE 2 PLAYBACK		150 mV/33 kΩ
TAPE 1 PLAYBACK, REC/PLAY Eingang		180 mV/39 kΩ
PHONO Maximale Eingangsspannungen (1 kHz RMS)		130 mV
Fremdspannungsabstand		
Nennleistung	**PHONO**	65 dB (IHF, A: 78 dB)
	AUX	80 dB (IHF, A: 95 dB)
−26 dB Ausgangsleistung	**PHONO, AUX**	55 dB
50 mW Ausgangsleistung	**PHONO, AUX**	55 dB
Frequenzgang	**PHONO**	RIAA Standardkurve ±0.5 dB
	AUX	20 Hz ~ 20 kHz, ±0.5 dB
		10 Hz ~ 45 kHz −1 dB
Klangregler	**BÄSSE**	50 Hz, +10 dB ~ −10 dB
	HÖHEN	10 kHz, +10 dB ~ −10 dB
Gehorgerechte Lautstärkekorrektur (Lautstärke bei −30 dB)		50 Hz, +10 dB
Ausgangsspannungen	**TAPE 1, 2 REC OUT**	150 mV
	TAPE 1 REC/PLAY Aufnahme	30 mV
Kanalabweichung (250 Hz ~ 6300 Hz)		±2.0 dB
Kanaltrennung bei 1 kHz		55 dB
Kopfhörerpegel und Ausgangsimpedanz		400mV/330Ω
Endimpedanz	**MAIN oder REMOTE**	4 ~ 16Ω
	MAIN und REMOTE	8 ~ 16Ω

UKW-TUNERTEIL

Empfangsbereich		88 ~ 108 MHz
Antennenanschluss		300Ω (symmetrisch), 75Ω (asymmetrisch)
Empfindlicheit (±40 kHz Hub)		1.9μV (IHF)
		20μV (IHF, 46 dB Fremdspannungsabstand, 75Ω, STEREO)
		1.9μV (30 dB Fremdspannungsabstand, 300Ω)
		1.7μV (26 dB Fremdspannungsabstand, 300Ω)
		1.5μV (20 dB Fremdspannungsabstand, 300Ω)
		1.3μV (30 dB Fremdspannungsabstand, 75Ω)
		1.2μV (26 dB Fremdspannungsabstand, 75Ω)
		0.9μV (20 dB Fremdspannungsabstand, 75Ω)
Harmonische Verzerrung	**MONO**	0.15%
	STEREO	0.3%
Fremdspannungsabstand (±40 kHz Hub)		
MONO		58 dB (IHF: 75 dB)
STEREO		55 dB (IHF: 70 dB)
Frequenzgang		20 Hz ~ 14 kHz, ±1.5 dB
Selektivität (400 kHz)		70 dB
Gleichwellen Selektion		1.5 dB
Spiegelselektion bei 98 MHz		65 dB
ZF-Festigkeit bei 98 MHz		80 dB
Unselektivitätsfestigkeit bei 98 MHz		80 dB
AM-Unterdrückung		55 dB
Stereo Übersprechdampfung	**1 kHz** 45 dB,	**10 kHz** 35 dB
Trägerrest	**19 kHz** −35 dB,	**38 kHz** −45 dB
Begrenzung, Einsatzpunkt		1.2μV
Bandbreite	**ZF-Verstärker**	250 kHz
	UKW-Demodulator	1000 kHz
Kanalabweichung (250 Hz ~6300 Hz)		±1.5 dB

MW-TUNERTEIL

Empfangsbereich	525 ~ 1605 kHz
Empfindlichkeit	30μV, 300μV/m
Selektivität	30 dB
Spiegelselektion bei 1000 kHz	45 dB
ZF-Festigkeit bei 1000 kHz	40 dB

ALLGEMEINE DATEN

Leistungsaufnahme	400 W
Netzspannung umschaltbar (50 Hz/60 Hz)	
	110 V/120 V/220 V/240 V
Abmessungen (B x H x T)	420 x 142 x 295 mm
Gewicht	8.0 kg

CARACTERISTICS TECHIQUES (DIN 45 500)

Sujet á changement sans préaris.

SECTION AMPLIFICATEUR

Puissance RMS (continue) de 1 kHz	
pour l'ensemble des canaux excités	2 x 44 W (4Ω)
	2 x 38 W (8Ω)
Puissance RMS (continue) de 20 Hz à 20 kHz	
pour l'ensemble des canaux excités	2 x 39 W (4Ω)
	2 x 35 W (8Ω)
Puissance RMS (continue) de 40 Hz à 16 kHz	
pour l'ensemble des canaux excités	2 x 39 W (4Ω)
	2 x 35 W (8Ω)
Largeur de bande de puissance	
pour l'ensemble des canaux excités 4Ω, 8Ω	7 Hz ~ 50 kHz, −3 dB
Distorsion harmonique totale	
pour la puissance mesurée à 1 kHz	0.3% (4Ω, 8Ω)
pour la puissance mesurée à 20 Hz ~20kHz	0.3% (4Ω, 8Ω)
pour la puissance mesurée à 40 Hz ~ 16 kHz	0.3% (4Ω, 8Ω)
pour une puissance mesurée de −26 dB, 1 kHz	0.2% (4Ω)
pour une puissance mesurée de 50 mW, 1 kHz	0.2% (4Ω)
Distorsion d'intermodulation	
pour la puissance mesurée à 250 Hz :8 kHz=4:1, 4Ω	0.3%
pour la puissance mesurée à 60 Hz: 7 kHz=4: 1, 8Ω	0.3%
Facteur d'amortissement	16 (4Ω), 32 (8Ω)
Sensibilité & impédance d'entrée	
PHONO	2.5 mV/47 kΩ
AUX, TAPE 2 PLAYBACK	150 mV/33 kΩ
TAPE 1 PLAYBACK, REC/PLAY entrée	180 mV/39 kΩ
Voltage d'entrée maximum (PHONO, 1 kHz RMS)	130 mV

CARACTERISTICS TECHIQUES (DIN 45 500)

Sujet à changement sans préaris.

Signal/bruit		
pour la puissance nominale	**PHONO**	65 dB (IHF, A: 78 dB)
	AUX	80 dB (IHF, A: 95 dB)
pour une sortie de −26 dB	**PHONO, AUX**	55 dB
pour une sortie de 50 mW	**PHONO, AUX**	55 dB
Réponse de fréquence		
PHONO		Courbe standard RIAA ±0.5 dB
AUX		20 Hz ~ 20 kHz 0.5 dB
		10 Hz ~ 45 kHz, −1 dB
Réglage de la tonalité		
BASS (graves)		50 Hz, +10 dB ~ −10 dB
TREBLE (aigus)		10 kHz, +10 dB ~ −10 dB
Contrôle d'intensité sonore (volume à −30 dB)		50 Hz, +10 dB
Tension de sortie	**TAPE 1, 2 REC OUT**	150 mV
	TAPE 1 REC/PLAY (sortie)	30 mV
Equilibrage de canaux (250 Hz ~ 6300 Hz)		±2.0 dB
Ecart canaux à 1 kHz		55 dB
Niveau des ecouleurs et impedance de sortie		400mV/330Ω
Impedance de charge	**PRINCIPALE ou ELOIGNEE**	4 ~ 16Ω
	PRINCIPALE + ELOIGNEE	8 ~ 16Ω

SECTION TUNER FM

Gamme de fréquences	88 ~ 108 MHz
Impédance d'antenne	300Ω (symetrique) 75Ω (asymetrique)
Sensibilité (±40 kHz déviation)	1.9μV (IHF, utilisable)
	20μV (IHF, signal/bruit 46 dB, 75Ω, STEREO)
	1.9μV (Signal/bruit 30 dB, 300Ω)
	1.7μV (Signal/bruit 26 dB, 300Ω)
	1.5μV (Signal/bruit 20 dB, 300Ω)
	1.3μV (Signal/bruit 30 dB, 75Ω)
	1.2μV (Signal/bruit 26 dB, 75Ω)
	0.9μV (Signal/bruit 20 dB, 75Ω)

Distorsion harmonique totale	**MONO**	0.15%
	STEREO	0.3%
Signal/bruit (±40 kHz déviation)	**MONO**	58 dB (IHF: 75 dB)
	STEREO	55 dB (IHF: 70 dB)
Réponse de fréquence		20 Hz ~ 14 kHz, ±1.5 dB
Sélectivite alternée par canal (400 kHz)		70 dB
Taux de capture		1.5 dB
Rejet d'image (à 98 MHz)		65 dB
Rejet FI (a 98 MHz)		80 dB
Rejet de réponse parasite (a 98 MHz)		80 dB
Suppression AM		55 dB
Séparation stéréophonique	**1 kHz**	45 dB, **10 kHz** 35 dB
Courant porteur de dispersion	**19 kHz**	−35 dB, **38 kHz** −45 dB
Point limite		1.2μV
Largeur de bande	**Amplificateur FI**	250 kHz
	Démodulateur FM	1000 kHz
Equllibrage de canaux (250 Hz ~ 6300 Hz)		±1.5 dB

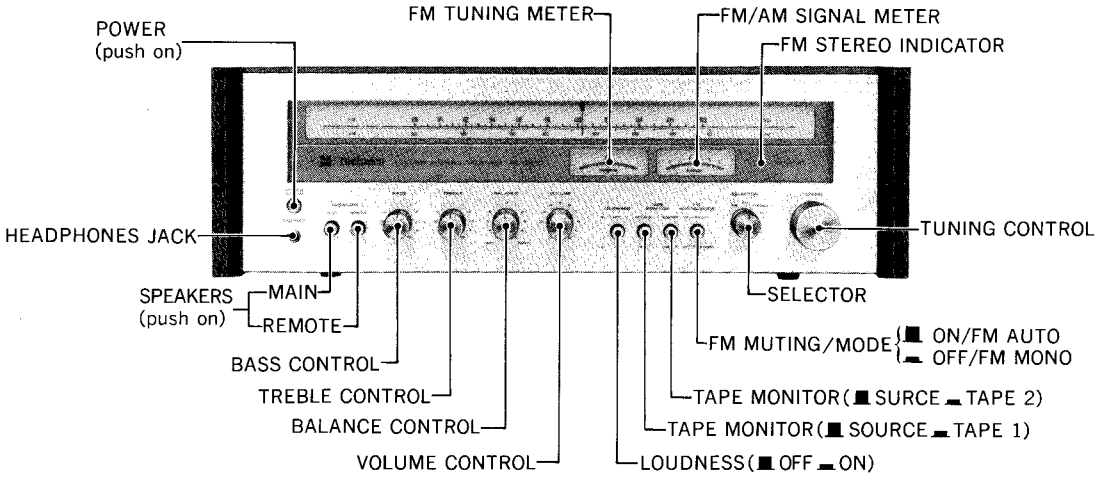
SECTION TUNER AM

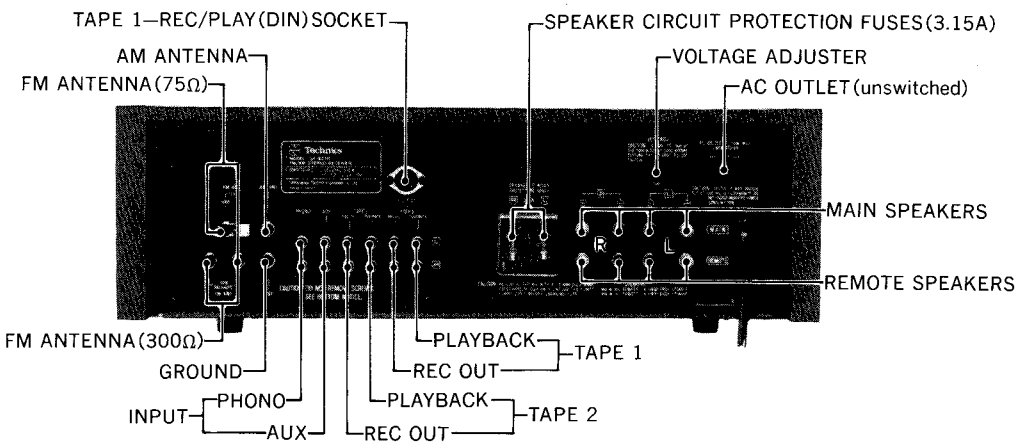
Gammr de fréquence	525 ~ 1605 kHz
Sensibltité	30μV, 300μV/m
Selectivite	30 dB
Rejet d'image (á 1000 kHz)	45 dB
Rejet FI (a 1000 kHz)	40 dB

GENERALITES

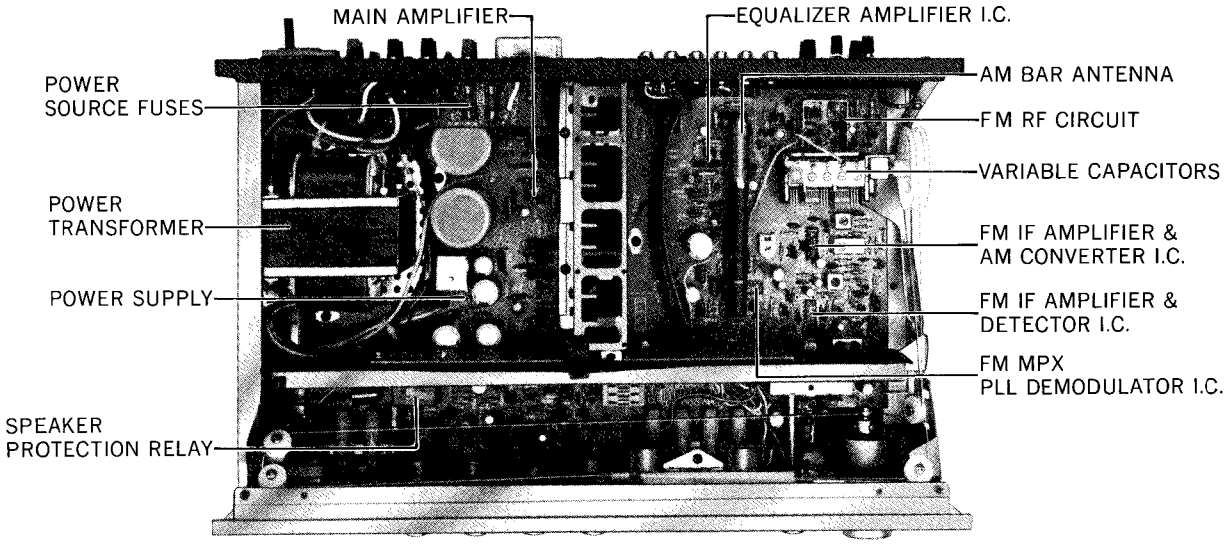
Consommation	400 W
Alimentation (50 Hz/60Hz)	110 V/120 V/220 V/240 V
Dimensions (L x H x Pr)	420 x 142 x 295 x mm
Poids	8.0 kg

■ LOCATAION OF CONTROLS





- This photo shows only the products for [XA]
- The products for other desitnations except [XA] are not equipped with AC outlet.
- For further remark, the products for [XAL] are not provided with voltage adjuster and AC outlet.



■ NOTE

The unit is provided with the speaker circuit protection fuses at the right and left channels respectively. The fuse is to prevent the power transistor from destruction, should the speaker terminals be short-circuited. Accordingly, if the unit fails to function upon completion of the speaker connections, check the speaker protection fuses first of all for possible blowing.

■ ALIGNMENT POINTS

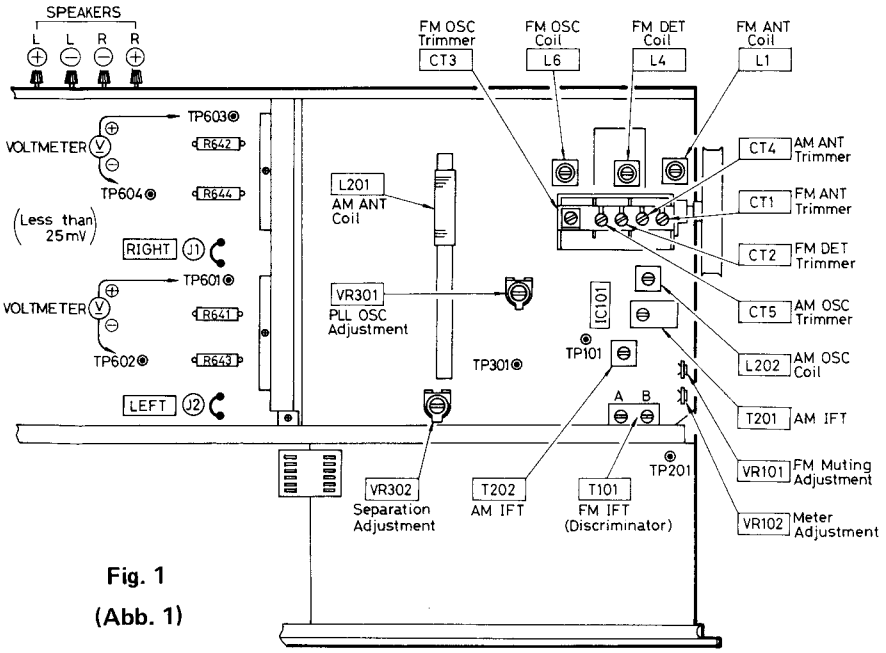
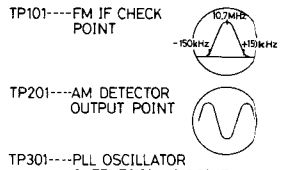
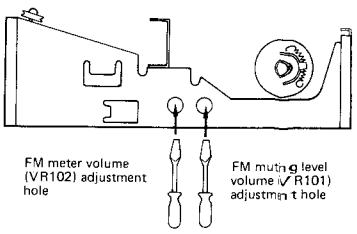


Fig. 1
(Abb. 1)





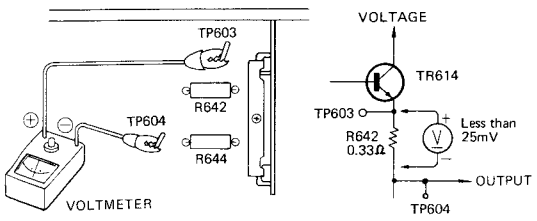


Fig. 2
(Abb. 2)

Voltage check method
(Stromspannung-prüfmethode)
Méthode de vérification
de tension

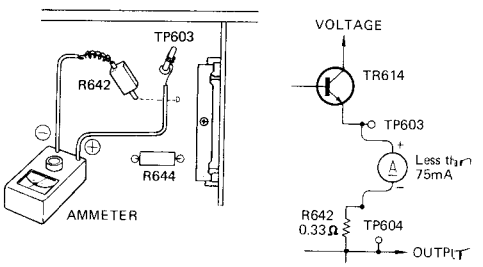


Fig. 3
(Abb. 3)

Current check method
(Stromstärke-Prüfmethode)
Méthode de vérification
de courant

■ TO REMOVE CABINET

(Products for [XA] and [XAL] only)

1. Remove four (4) cabinet-mounting screws (① ~ ④), as shown in fig.4.
2. Remove cabinet from chassis.
3. When installing the front panel, insert the cabinet edge into grove of front panel as shown in fig.5.

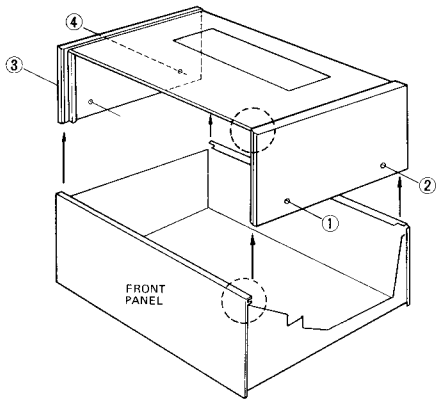


Fig. 4

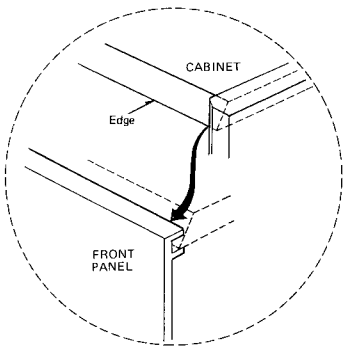


Fig. 5

■ TO REMOVE BOTTOM BOARD

1. Remove eight (8) bottom board-mounting screws (① ~⑧), as shown in fig. 6.
2. When the bottom board is to be removed for repair, never remove any screws other than set screws for the bottom board. Energization of the unit with screws other than the bottom board set screws removed may result in troubles in the circuit.

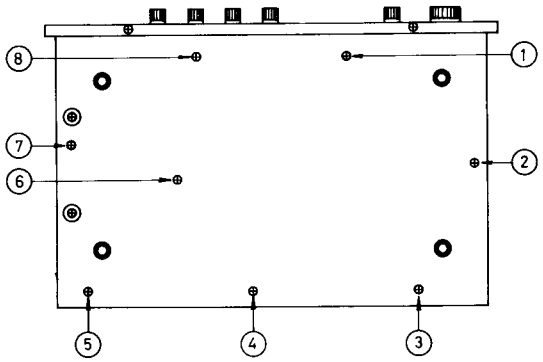


Fig. 6

■ ALIGNMENT INSTRUCTIONS... MAIN AMPLIFIER CIRCUIT

- When the power transistor is replaced, be sure to apply silicone compound (or equivalent thermal diffusion agent) onto the mica plate, and at the same time confirm the idling current of the power transistor. (measure voltage across the emitter resistance)

Ⓐ For adjustment with DC voltmeter

1. Turn the speaker switch "OFF".
2. Connect the DC voltmeter as shown in "Alignment Points". (Fig. 1)
3. If the reading is under 25mV approximately several minutes after turning ON the power supply, the circuit is "OK". On the other hand, if the reading is over 25mV, cut off the lead wire for (J2) in the case of left channel (The lead wire for (J1) in the case of right channel).
4. Should the reading not fall under 25mV even when the lead wire has been cut off, there is something wrong with the circuit, and therefore, check the power source circuit or main amplifier circuit.

NOTE: When cutting off the lead wire, cut off the same at the root.

Ⓑ Current should be checked only when adjustment is made with a tester. (measuring instrument incapable of measuring voltage in mV unit.)

1. Turn OFF the power supply for the set.
2. Connect the ammeter as shown in Fig. 3 (Case of right channel).
3. After ensuring that the ammeter will not come off, turn ON the power supply.
4. If the reading is under 75mA after several minutes (But, when nothing resistance of internal resistor by ammeter) the circuit is "OK". If over 75mA, cut off the lead wire for (J2) in the case of left channel (The lead wire for (J1) in the case of right channel).
5. If the reading does not fall under 75mA, there is something wrong with the circuit.

NOTE: The adjustment may be made either by Ⓐ or by Ⓑ method. (We recommend the method Ⓐ where possible). Figs. 2 and 3 are related to the case of right channel.

■ ALIGNMENT INSTRUCTIONS ... FM AND AM TUNER CIRCUIT

NOTE For adjustment, proceed with the bottom board attached as it is.

Notes:
1. Selector switch ..... {AM (AM Alignment) / FM (FM Alignment)
2. FM Muting/mode switch ..... on/FM auto
3. Maintain line voltage at rated voltage.
4. Tape monitor switch ..... Source
5. Speakers switch ..... MAIN and REMOTE to ON
6. Volume control ..... Variable
7. Output of signal generator should be no higher than necessary to obtain an output reading.
8. 300Ω FM dummy antenna ..... Refer to fig. 7.

	AM/FM SIGNAL GENERATOR		DIAL SETTING	INDICATOR (VTVM or SCOPE) (DISTORTION METER)	ADJUSTMENT POINTS	REMARKS
	CONNECTION	FREQUENCY				
	AM ALIGNMENT					
1	AM signal generator high side through 0.001μF to AM antenna trimmer terminal.	455kHz (30% Mod. with 400Hz) [Set for England to 470kHz]	Point of non-inter-ference	Connect VTVM or scope to speaker terminal(L or R) or TP201 of set.	T201 (1st IFT) T202 (2nd IFT)	Adjust for maximum output.
2	Fashion loop of several turns of wire and radiate signal into loop of receiver.	600kHz (30% Mod. with 400Hz)	600kHz	Connect VTVM or scope to speaker terminal(L or R) or TP201 of set.	L202 (OSC Coil) L201 (ANT Coil)	Adjust for maximum output. Adjust L201 by moving coil bobbin along ferrite core.
3	Fashion loop of several turns of wire and radiate signal into loop of receiver.	1500kHz (30% Mod. with 400Hz)	1500kHz	Connect VTVM or scope to speaker terminal (L or R) or TP201 of set.	CT5 (OSC Trimmer) CT4 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	FM IF ALIGNMENT					
4		No signal	Point of non-inter-ference	FM Tuning meter of set	T101 (Discri IFT) Primary [A]	Adjust for center of tuning meter indi-cation.
	FM RF ALIGNMENT					
5	Connect FM signal gene-rator to 300Ω FM antenna terminals through FM dummy antenna.	90MHz (100% Mod. with 400Hz)	90MHz	Connect VTVM or scope to speaker terminal(L or R) or TP101 of set.	L6 (OSC Coil) L4 (DET Coil) L1 (ANT Coil)	Adjust for maximum output.
6	Connect FM signal gene-rator to 300Ω FM antenna terminals through FM dummy antenna.	106MHz (100% Mod. with 400Hz)	106MHz	Connect VTVM or scope to speaker terminal(L or R) or TP101 of set.	CT3 (OSC Trimmer) CT2 (DET Trimmer) CT1 (ANT Trimmer)	Adjust for maximum output. Repeat steps (5) and (6).
	FM MONO DISTORTION ALIGNMENT					
7	Connect FM signal gene-rator to 300Ω FM antenna terminals through FM dummy antenna.	100MHz (100% Mod. with 400Hz)	100MHz	Connect distortion meter to left channel speaker terminal of set.	T101 (Discri IFT) Secondary [B]	Tuning at 100MHz and adjust for mini-mum distortion. Repeat steps (4) and (7).
	FM SIGNAL METER ALIGNMENT					
8	Connect FM signal gene-rator to 300Ω FM antenna terminals through FM dummy antenna. Apply about 100dB (100mV)	100MHz (100% Mod. with 400Hz)	100MHz	Signal meter of set.	VR102	FM Muting/Mode switch to "off/FM mono". Adjust VR102 to about "4.7" on signal meter scale.
	FM MUTING LEVEL ALIGNMENT					
9	Connect FM signal gene-rator to 300Ω FM antenna terminals through FM dummy antenna. Apply 16dB (6.3μV) to set. SG indication are 28dB (IHF)	100MHz (100% Mod. with 400Hz)	100MHz	Connect VTVM or scope to speaker (L or R) terminal of set.	VR101	FM Munting/Mode switch to "on/FM auto". Adjust so that output can be obtained.

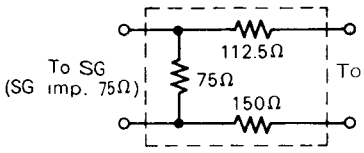
FM MPX PILOT ALIGNMENT

	Using a frequency counter	Using alternate system
10	1. 98MHz Non-modulated mono signal applied to set. 2. FM Muting/Mode switch to "on/FM auto". 3. Connect frequency counter to **TP301** through resistor (100kΩ). 4 Adjust **VR301** to 19kHz ±30Hz.	1. Apply stereo signal from generator or stereo station to receiver. 2. Adjust **VR301** until stereo indicator lights up. Cement arm of **VR301** as shown in fig. 8.

STEREO SEPARATION ALIGNMENT

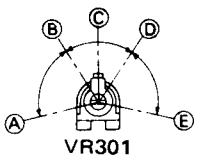
Notes:
1. Stereo modulator ..... • Connect stereo modulator output to EXT. MOD. terminal of signal generator. • Internal OSC ..... 1kHz • Pilot signal modulation 10%
2. FM signal generator ..... • Frequency approximately 100MHz. • Output level to 72dB (IHF) • Modulation mode to FM
3. Band selector switch ..... FM
4. FM Muting/mode switch ..... on/FM auto

	FM SIGNAL GENERATOR CONNECTION	STEREO MODULATOR MODE AND MOD. RATE	INDICATOR (VTVM or SCOPE)	ADJUSTMENT POINT	REMARK
11	300Ω FM antenna terminals through FM dummy antenna	**L** (and R) 30% Modulation	Connect VTVM or scope to output terminals through low pass filter. Refer to fig. 9.	VR302	Adjust for minimum **right** (and left) output



300Ω FM Dummy Antenna

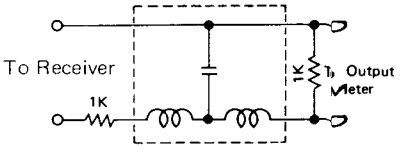
Fig. 7 (Abb. 7)



VR301

A – B, D – E: Stereo OFF Position.
B – D: Stereo ON Position (Indicator Lighting).
C: Adjust Point of Pilot Circuit.

Fig. 8 (Abb. 8)



LOW PASS FILTER
(fc = 15kHz ~19kHz)

Fig. 9 (Abb. 9)

■ ABGLEICHANWEISUNGEN (Verstärkerteil)

- Wenn der Netztransistor ersetzt wird, ist zu beachten, daß eine Siliziumverbindung (oder ähnliches Thermodiffusionsmittel) auf die Glimmerplatte gegeben wird, und zur gleichen Zeit der Blindstrom des Netztransistors festgestellt wird.. (Die Spannung über den Emitterwiderstand messen.)

Ⓐ Zum Justieren mit dem Gleichstrom-Voltmeter

1. Drehen Sie den Lautsprecherschalter auf "OFF".
2. Schließen Sie den Gleichstrom-Voltmeter an, wie in Abb. 1 des Justrerpunkte-Diagramms gezeigt.
3. Falls die Anzeige weniger als ca. 25 mV beträgt, so ist die Schaltung in Ordnung. Falls aber die Anzeige mehr als 25 mV beträgt, sehneiden Sie den Leitungsdraht für (J2) im Palle des linken Kanals weg (oder den Leitungsdraht für (J1) im Falle des rechten Kanals) .
4. Falls die Anzeige auch nach Unterbrechen des Leitungsdrahtes nicht unter 25 mV fällt, so ist die Schaltung nicht in Ordnung, und die Stromquellenschaltung und die Hauptverstärkerschaltung müssen überprüft werden.

ANMERKUNG: Falls das Wegschneiden des Leitungsdrahtes nötig ist, schneiden Sie diesen nahe am Anschlußpunkt weg.

Ⓑ Die Stromstärke sollte nur gepräft werden, wenn die Justierung mit einem Prüfgerät vorgenommen wird. (Mit dem Meßinstrument kann die Spannung nicht in mV gemessen werden.)

1. Schalten Sie die Stromzufuhr zum Gerät aus.
2. Schließen Sie das Ammeter an, wie in Abb. 3 gezeigt.
3. Nachdom Sie sich vergewissert haben, daß das Ammeter solide befestigt ist, schalten Sie die Stromzufuhr ein.
4. Falls die Anzeige einige Minuten nach dem Einschalten weniger als 75 mA beträgt, so ist die Schaltung in Ordnung. Liegt die Anzeige über 75 mA, schneiden Sie den Leitungsdraht für (J2) im Falle des linken Kanals weg. (oder den Leitungsdraht für (J1) im Falle des rechten Kanals) .
5. Falls die Anzeige auch dann nicht unter 75 mA fällt, so ist die Schaltung defekt.

ANMERKUNG: Die Justierung kann entweder nach Methode Ⓐ oder Ⓑ vorgenommen werden. (Wo möglich, empfehlen wir Methode Ⓐ . Die Abbildungen 2 und 3 beziehen sich auf den linken kanal.

■ INSTRUCTIONS D'ALIGNEMENT (Partie amplificateur)

- Lorsque le transistor de puissance est remplacé, s'assurer d'appliquer le composé de silicone (ou un agent de diffusion thermique équivalent) sur la plaque de mica et confirmer en même temps le courant déwatté du transistor de puissance. (Mesurer la tension à travers la résistance de l'émetteur).

Ⓐ Pour la mise au point avec un voltmetre C.C.

1. Tourner le commutateur de haut-parleur sur "OFF".
2. Connecter le voltmètre C.C. comme dans la Fig. 1 du schéma des endroits de vérification.
3. Si la lecture est approximativement inférieure à 25 mV plusieurs minutes après la mise en marche de l'alimentation, le circuit fonctionne correctement. Par contre, si la lecture est au-delà de 25 mV, couper le fil de jonction pour (J2) dans le cas du canal Gauche [L] , (le fil de jonction pour (J1) , dans le cas du canal Droite [R]).
4. Si la lecture ne descends pas au-dessous de 25 mV même lorsque le fil de jonction a été coupé, cela signifie qu il y a quelque chose d'incorrect dans le circuit et par conséquent, il sera nécessaire de vérifier le circuit d'alimentation ou le circuit d'amplification principal.

REMARQUE: Lorsqu'on coupe le fil de jonction, le couper à l'extrémité de sa racine.

Ⓑ Le courant ne devra être vérifié seulement que lorsque la mise au point est faite avec un appareil contrôleur. (Appareil de mesure incapable d'une tension de mesure dans un appareillage de mV).

1. Couper l'alimentation de l'appareillage.
2. Brancher l'ampèremètre, comme il est montré à la Fig. 3.
3. Après s'être assuré que l'ampèremètre n'est pas débranché, mettre en marche l'alimentation.
4. Si la lecture est inférieure à 75 mA après plusieurs minutes, le circuit fonctionne correctement. Si par contre la lecture va au-delà de 75 mA, couper le fil de jonction pour (J2) dans le cas du canal Gauche [L] , (le fil de jonction pour (J1) , dans le cas du canal Droite [R]).
5. Si la lecture ne descends pas au-dessous de 75 mA, cela signifie qu'il y a quelque chose de défectueux dans le circuit.

REMARQUE: La mise au point doit être faite soit avec la méthode Ⓐ, soit avec la méthode Ⓑ. (Si c'est possible, nous recommandons la méthode Ⓐ. Les Figures 2 et 3 se rapportent au cas du canal Gauche [L].

■ ABGLEICHANWEISUNGEN (FM/AM Tunerteil)

(Für Deutshland)

Anmerkungen:
1. Bereichsschalter . . . . . AM (AM Abgleich) / FM (FM Abgleich)
2. FM Muting/ mode-Schalter . . . . on/ FM auto
3. Die Netzspannung auf ihren Sollwert einstellen.
4. Tape/ Monitor-Umschalter . . . . SOURCE
5. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute Ablesung.
6. UKW-Kunstantenne, 300 ohm . . . . . Vgl. Abb. 7.
7. Lautsprecher-Schalter . . . . . ON

	AM/UKW MESSENDER order WOBBELGENERATOR		SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGE (Röhrenvoltmeter order Oszillograph ozw. Klirrfaktor-Meßgerät)	ABGLEICHS-PUNKTE	BEMERKUNGEN
	ANSCHLUSS	FREQUENZ				
	AM-ABGLEICH					
1	Heißes Ende des Meßsender über einen 0.001µF Kondensator un den AM Antenneneingang schließen. Kaltes Ende an Masse	455kHz (400Hz Modulat., 100%)	Kein Empfang	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	T201 (1. IFT) T202 (2. IFT)	Auf max. Ausgang abgleichen.
2	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	600kHz (400Hz Modulat., 30%)	600kHz	Röhrenvoltmeter order Oszillograph über den Lautsprecher schließen.	L202 (Osc. Spule) L201 (Ant. Spule)	Auf max. Ausgang abgleichen. L201 wird abgeglichen, indem die Spule am Ferritstab. entlanggeschoben wird.
3	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	1500kHz (400Hz Modulat., 30%)	1500kHz	Röhrenvoltmeter oder Oszillograph über den Loutsprecher schließen.	CT5 (Osc. Trimmer) CT4 (Ant. Trimmer)	Auf max. Ausgang abgleichen. Schritte (2) und (3) sind zu wiederholen.
	UKW ZF-ABGLEICH					
4		Kein Signal	Kein Empfang	Abstimmanzeige.	T101(Diskriminator IFT) [A]	Den Abstimmungsanzeiger auf den zentrum Wert einstellen.
	UKW HF-ABGLEICH					
5	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87.5MHz (400Hz Modulat., 100%)	87.5MHz (Frequenz min.)	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	L6 (Osc. Spule)	Auf max. Ausgang abgleichen.
6	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	90MHz (400Hz Modulat., 100%)	90MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	L4 (Det. Spule) L1 (Ant. Spule)	Auf max. Ausgang abgleichen.
7	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	106MHz (400Hz Modulat., 100%)	106MHz	Röhrenvoltmeter oder Oszillograph über den Loutsprecher schßeßen.	CT3 (Osc. Trimmer) CT2 (Det. Trimmer) CT1 (Ant. Trimmer)	Auf max. Ausgang abgleichen Schritte(5), (6) und (7) sind zu wiederholen.
	ABGLEICH AUF MIN. VERZERRUNG IN STELLUNG UKW-MONO					
8	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz (400Hz Modulat., 100%)	100MHz	Klirrfaktor-Meßbrücke über den Lautsprecher schlieben.	T101 (Diskriminator IFT) [B]	Auf min. Verzerrung auf der Klirrfaktor-Meßbürcke abgleichen Schritt (4) und (8) sind zu wiederholen.
	UKW-FELDSTÄRKEANZEIGE-ABGLEICH					
9	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender für 100dB (IHF) (ca. 100mV) einstellen.	100MHz (400Hz Modulat., 30%)	100MHz	Feldstärkenanzeige	VR102	FM Muting-Schalter auf "on/ FM auto" VR102 auf ca. 4,7 der Feldstärkeanzeige einstellen.
	UKW-MUTING-ABGLEICH					
10	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 16 dB (6.3µV) einstellen.	100 MHz (400 Hz Modulat., 100%)	100 MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	VR101	FM Muting-Schalter auf "off/ FM mono" So einstellen, daß ein Ausgang zu vernehmen ist.

UKW-STEREO-DEKODER-ABGLEICH

	Unter Verwendung eines Zählers	Alternativ-Meßmethode
11	1. Unmoduliertes Mono-Signal 100 MHz in das Gerät speisen. 2. FM Muting-Schalter auf "on/ FM auto" stellen. 3. Zähler über einen Widerstand 100K ohm an **TP301** schließen. 4. **VR301** auf 19kHz ±30Hz einstellen.	1 Stereosignal entweder von einem Stereogenerator oder einem Sender einspeisen. 2. **VR301** so einstellen, bis die Stereolampe auf leuchtet. Schleifer von **VR301** sichern, wie in Abb. 8 gezeigt.

KANALTRENNUNG-ABGLEICH

Anmerkungen:
1. Stereo-Modulator . . . . . Ansgang des Stereo-Modulators an den Eingang EXT MOD des Meßsenders schließen. Eingebauter Oszillator . . . . . 1kHz / Pilotton-Modulation 10%
2. UKW Meßsender . . . . . Auf etwa 100MHz einstellen. Ausgangspegel 72dB (IHF). Modulation FM
3. Bereichsschalter . . . . . FM
4. Muting/ Mode-Schalter . . . . . on/FM auto

	ANSCHLUSS DES UKW MESSENDERS	STEREO MODULATOR MODE oder MOD. RATE	ANZEIGE (Röhrenvoltmeter oder Oszillograph)	ABGLEICHS-PUNKTE	ANMERKUNGEN
12	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	**L**(und R) Modulation 30%	Röhrenvoltmeter oder Oszillograph über Tiefpassfilter an den Tuner-Ausgang schließen. Vgl. Abb. 9.	VR302	Auf min. Ausgang **rechter** (und linker) abgleichen.

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■ ABGLEICHANWEISUNGEN (FM/AM Tunerteil)

(Für Deutshland)

Anmerkungen:
1. Bereichsschalter ..... AM (AM Abgleich) / FM (FM Abgleich)
2. FM Muting/ mode-Schalter ..... on/ FM auto
3. Die Netzspannung auf ihren Sollwert einstellen.
4. Tape/ Monitor-Umschalter ..... SOURCE
5. Der Ausgang des Meßsenders darf nicht höher sein als unbedingt notwendig für eine gute Ablesung.
6. UKW-Kunstantenne, 300 ohm .....Vgl. Abb. 7.
7. Lautsprecher-Schalter ..... ON

	AM/UKW MESSENDER oder WOBBELGENERATOR		SKALENZEIGEREINSTELLUNG DES TUNER	ANZEIGE (Röhrenvoltmeter order Oszillograph ozw. Klirrfaktor-Meßgerät)	ABGLEICHSPUNKTE	BEMERKUNGEN
	ANSCHLUSS	FREQUENZ				
	AM-ABGLEICH					
1	Heißes Ende des Meßsender über einen 0.001μF Kondensator an den AM Antenneneingang schließen. Kaltes Ende an Masse	455kHz (400Hz Modulat., 100%)	Kein Empfang	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	T201 (1. IFT) T202 (2. IFT)	Auf max. Ausgang abgleichen.
2	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	600kHz (400Hz Modulat., 30%)	600kHz	Röhrenvoltmeter order Oszillograph über den Lautsprecher schließen.	L202 (Osc. Spule) L201 (Ant. Spule)	Auf max. Ausgang abgleichen. L201 wird abgeglichen, indem die Spule am Ferritstab. entlanggeschoben wird.
3	Das Meßsendersignal induktiv in den Tuner speisen. Hierzu behelfsmäßig eine Rahmenantenne fertigen und an den Eingang schließen.	1500kHz (400Hz Modulat., 30%)	1500kHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	CT5 (Osc. Trimmer) CT4 (Ant. Trimmer)	Auf max. Ausgang abgleichen. Schritte (2) und (3) sind zu wiederholen.
	UKW ZF-ABGLEICH					
4		Kein Signal	Kein Empfang	Abstimmanzeige.	T101(Diskriminator IFT) [A]	Den Abstimmungsanzeiger auf den zentrum Wert einstellen.
	UKW HF-ABGLEICH					
5	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	87.5MHz (400Hz Modulat., 100%)	87.5MHz (Frequenz min.)	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	L6 (Osc. Spule)	Auf max. Ausgang abgleichen.
6	Meßsender üder eine Kunstantenne an den UKW-Antenneneingang schließen.	90MHz (400Hz Modulat., 100%)	90MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	L4 (Det. Spule) L1 (Ant. Spule)	Auf max. Ausgang abgleichen.
7	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	106MHz (400Hz Modulat., 100%)	106MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schßeßen.	CT3 (Osc. Trimmer) CT2 (Det. Trimmer) CT1 (Ant. Trimmer)	Auf max. Ausgang abgleichen Schritte(5), (6) und (7) sind zu wiederholen.
	ABGLEICH AUF MIN. VERZERRUNG IN STELLUNG UKW-MONO					
8	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	100MHz (400Hz Modulat., 100%)	100MHz	Klirrfaktor-Meßbrücke über den Lautsprecher schlieben.	T101 (Diskriminator IFT) [B]	Auf min. Verzerrung auf der Klirrfaktor-Meßbürcke abgleichen Schritt (4) und (8) sind zu wiederholen.
	UKW-FELDSTÄRKEANZEIGE-ABGLEICH					
9	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender für 100dB (IHF) (ca. 100mV) einstellen.	100MHz (400Hz Modulat., 30%)	100MHz	Feldstärkenanzeige	VR102	FM Muting-Schalter auf "on/ FM auto" VR102 auf ca. 4,7 der Feldstärkeanzeige einstellen.
	UKW-MUTING-ABGLEICH					
10	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen. Meßsender auf 16 dB (6.3μV) einstellen.	100 MHz (400 Hz Modulat., 100%)	100 MHz	Röhrenvoltmeter oder Oszillograph über den Lautsprecher schließen.	VR101	FM Muting-Schalter auf "off/ FM mono" So einstellen, daß ein Ausgang zu vernehmen ist.

UKW-STEREO-DEKODER-ABGLEICH

	Unter Verwendung eines Zählers	Alternativ-Meßmethode
11	1. Unmoduliertes Mono-Signal 100 MHz in das Gerät speisen. 2. FM Muting-Schalter auf "on/ FM auto" stellen. 3. Zähler über einen Widerstand 100K ohm an **TP301** schließen. 4. **VR301** auf 19kHz ±30Hz einstellen.	1 Stereosignal entweder von einem Stereogenerator oder einem Sender einspeisen. 2. **VR301** so einstellen, bis die Stereolampe auf leuchtet. Schleifer von **VR301** sichern, wie in Abb. 8 gezeigt.

KANALTRENNUNG-ABGLEICH

Anmerkungen:
1. Stereo-Modulator ..... Ansgang des Stereo-Modulators an den Eingang EXT MOD des Meßsenders schließen. Eingebauter Oszillator ..... 1kHz / Pilotton-Modulation 10%
2. UKW Meßsender ..... Auf etwa 100MHz einstellen. Ausgangspegel 72dB (IHF). Modulation FM
3. Bereichsschalter ..... FM
4. Muting/ Mode-Schalter..... on/FM auto

	ANSCHLUSS DES UKW MESSENDERS	STEREO MODULATOR MODE oder MOD. RATE	ANZEIGE (Röhrenvoltmeter oder Oszillograph)	ABGLEICHSPUNKTE	ANMERKUNGEN
12	Meßsender über eine Kunstantenne an den UKW-Antenneneingang schließen.	**L**(und R) Modulation 30%	Röhrenvoltmeter oder Oszillograph über Tiefpassfilter an den Tuner-Ausgang schließen. Vgl. Abb. 9.	VR302	Auf min. Ausgang **rechter** (und linker) abgleichen.

■ INSTRUCTIONS D'ALIGNMEMENT (Partie tuner FM/AM)

Notes:
1. Commutateur de gamme..... AM (Alignement AM) / FM (Alignement FM)
2. Commutateur de silencieux ... on/FM auto
3. Conserver la tension du secteur à la tension nominale.
4. Commutateur de contrôle auditif ..... SOURCE (relâchée)
5. Le signal de sortie du générateur ne doit pas être plus élevé que nécessaire à la lecture en sortie de lâppareil.
6. Antenne fictive FM 300Ω .....Voir fig. 10.
7. Commutateur d'enceintes ..... ON

	AM/FM GENERATEUR		AIGUILLE SUR LE CADRAN	INDICATEUR (VOLTMETRE ELECTRONIQUE OSCILLOSCOPE OU DISTORSIONMETRE)	POINTS DE REGLAGE	OBSERVATIONS
	BRANCHEMENT	FREQUENCE				
	ALIGNEMENT AM					
1	Côté chaud, à travers 0.001μF, sur le trimmer de l'antenne AM, commum an shâssis	455kHz (modulé à 30% par 400Hz)	Point sans signal	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	T201 (1 transfo FI) T202 (2 transfo FI)	Réglez au maximum de signal de sortie.
2	Faire une boucle de quelgues tours et rayonner le signal dans le cadre du l'ampli-tuner.	600kHz (modué à 30% par 400Hz)	600kHz	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	L202 (bobine OSC) L201 (bobine ANT)	Réglez au maximum de signal de sortie. Réglez L201 en déplacant la bobine le long du noyau de ferrite.
3	Faire une boucle de quelgues tours et rayonner le signal dans le cadre du l'ampli-tuner.	1500kHz (modulé à 30% par 400Hz)	1500kHz	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	CT5 (trimmer OSC) CT4 (trimmer ANT)	Réglez au maximum de signal de sortie. Recommencez les étapes (2) et (3).
	A LIGNEMENT FI—FM					
4		Sans signal	point sans signal	Indicateur d'accord de l'appareil	T101 (Transfo FI discri.) [A]	Réglez pour atteindre position médiane sur l'indicateur d'accord.
	ALIGNEMENT RF—FM					
5	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	90MHz (modulé à 100% par 400Hz)	90MHz	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	L6 (bobine OSC) L4 (bobine DET) L1 (bobine ANT)	Réglez au maximum de signal de sortie.
6	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	106MHz (modulé à 100% par 400Hz)	106MHz	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	CT3 (trimmer OSC) CT2 (trimmer DET) CT1 (trimmer ANT)	Réglez au maximum de signal de sortie. Recommencez les étapes (5) et (6).
	REGLAGE DE LA DISTORSION FM EN MONO					
7	Branchez sur la prise d'antenne FM à travers une antenne fictive FM.	100MHz (modulé à 100% par 400Hz)	100MHz	Distorsionmétre sur prise de sortie du tuner.	T101 (Transfo FI discri.) [B]	Réglez au minimum d'indication du distorsiomètre. Recommencez les étapes (4) et (7).
	REGLAGE DE L'INDICATEUR D'ACCORD FM					
8	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 100dB(0.1V)	100MHz (modulé à 100% par 400Hz)	100MHz	Indicateur d'intensité	VR102	Commutateur de silencieux sur "off/FM mon. Réglez VR102 pour obtenir env. "4.7" points sur l'échelle d'intensité.
	REGLAGE DU SEUIL DU SILENCIEUX D'ACCORD					
9	Branchez sur la prise d'antenne FM à travers une antenne fictive FM. Niveau de sortie du générateur 16 dB (6.3μV).	100 MHz (modulé à (100% par 400Hz)	100 MHz	Branchez un voltmètre électronique ou un oscilloscope sur les bornes de hout-parleur de l'ampli-tuner	VR101	Commutateur de silencieux sur "on/FM auto. Régler pour obtenir une lecture en sortie.

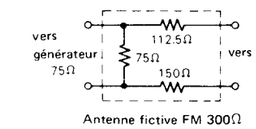
ALIGNEMENT DU PILOTE MULTIPLEX FM

	Avec un fréquencemétre	Par un outre système
10	1. Signal mono 100MHz non modulé appliqué à l'appareil. 2. Commutateur de silencieux sur "on/FM auto". 3. Branchez le fréquencemètre sur **TP301**à travers une résistance de 100kΩ. 4. Réglez **VR301** sur 19kHz ± 30Hz.	1. Appliquez à l'appareil un signal stéréo provenant d'un générateur ou de la réception d'un émetteur. 2. Réglez **VR301** jusqu á ce que l'indicateur de stéréophonic s'allume. Collez le curseur de **VR301** comme indiqué sur la fig. 11.

REGLAGE DE LA SEPARATION DES CANAUX

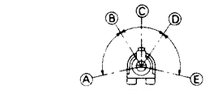
Notes:
1. Modulateur stéréo..... Branchez sa sortie sur la prise EXT. MOD. du générateur. OSC interne ..... 1kHz Modulation du signal pilote 10%
2. Générateur de signal ..... Fréquence env. 100MHz, niveau de sortie 72dB (IHF), genre de modulation sur FM.
3. Commutateur de gamme .... FM
4. Commutateur de silencieux .....on /FM auto

	BRANCHEMENT DU GENERATEUR DE SIGNAL	MODE DU MODULATEUR STEREO ET TAUX DE MODULATION	INDICATEUR (VOLTMETRE ELECTRONIQUE OU OSCILLOSCOPE)	POINTS DE REGLAGE	OBSERVATIONS
11	Borne d'antenne FM à travers antenne fictive.	**Gauche** (et droite) à 30% de modulation.	Sur les bornes de haut-parleur à travers un filtre passe-bas, voir fig. 12.	VR302	Réglez au minimum de sortie **droite**(et gauche)



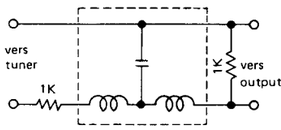
Antenne fictive FM 300Ω

Fig. 10



Ⓐ-Ⓑ , Ⓓ-Ⓔ: Position stéréo arrêt
Ⓑ-Ⓓ : Position stéréo en marche (éclairage du voyant indicateur)
Ⓒ : Point de réglage du circuit pilote

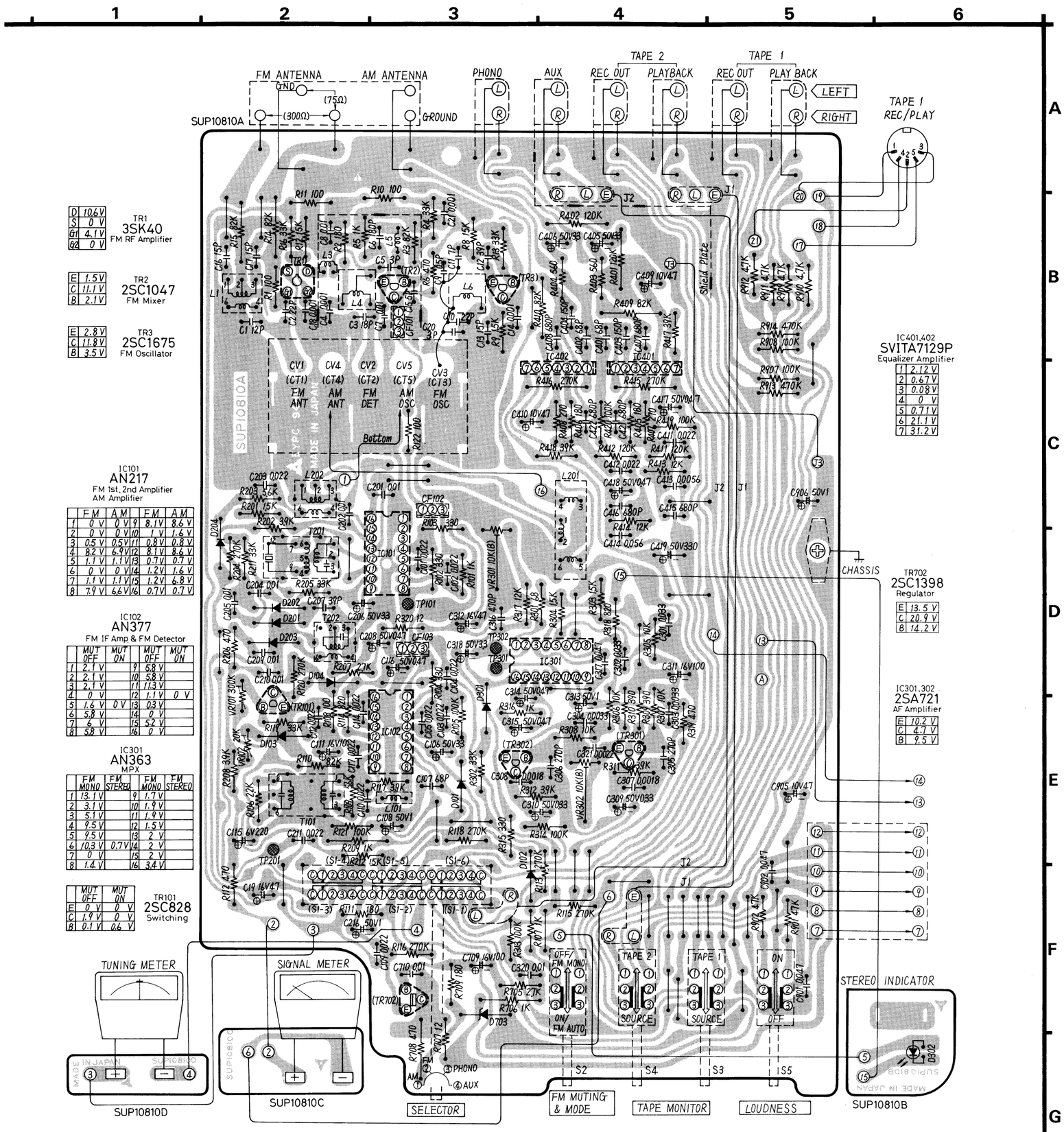
Fig. 11



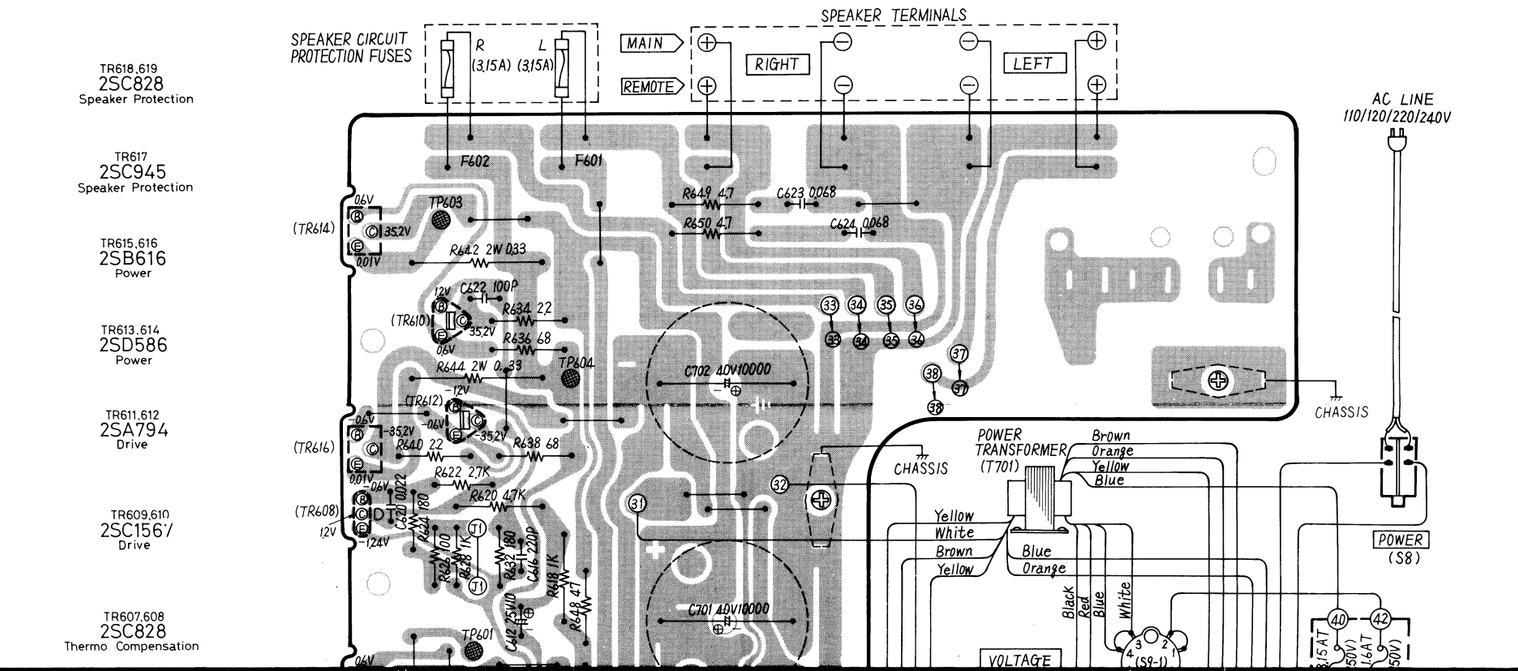
FILTRE PASSE-BAS
(fc = 15 kHz ~19 kHz)

Fig. 12

■ FM/AM TUNER AND EQUALIZER CIRCUIT BOARD



■ TONE CONTROL, MAIN AMPLIFIER, POWER SUPPLY AND PROTECTION CIRCUIT BOARD



IC301
AN377
FM IF Amp & FM Detector

	MUT OFF	MUT ON		MUT OFF	MUT ON	
1	2.1 V		9	6.8 V		
2	2.1 V		10	5.8 V		
3	2.1 V		11	11.3 V		
4	0 V		12	1.1 V	0 V	
5	1.6 V	0 V	13	0.3 V		
6	5.8 V		14	0 V		
7	6 V		15	5.2 V		
8	5.8 V		16	0 V		

IC301
AN363
MPX

	FM MONO	FM STEREO		FM MONO	FM STEREO
1	13.1 V		9	1.7 V	
2	3.1 V		10	1.9 V	
3	5.1 V		11	1.9 V	
4	9.5 V		12	1.5 V	
5	9.5 V		13	2 V	
6	10.3 V	0.7 V	14	2 V	
7	0 V		15	2 V	
8	1.4 V		16	3.4 V	

TR101
2SC828
Switching

	MUT OFF	MUT ON
E	0 V	0 V
C	1.9 V	0 V
B	0.1 V	0.6 V

IC301,302
2SA721
AF Amplifier

E	10.2 V
C	4.7 V
B	9.5 V

TUNING METER

SIGNAL METER

STEREO INDICATOR

SUP10810D

SUP10810C

SUP10810B

SELECTOR

FM MUTING & MODE

TAPE MONITOR

LOUDNESS

■ TONE CONTROL, MAIN AMPLIFIER, POWER SUPPLY AND PROTECTION CIRCUIT BOARD

TR618,619
2SC828
Speaker Protection

TR617
2SC945
Speaker Protection

TR615,616
2SB616
Power

TR613,614
2SD586
Power

TR611,612
2SA794
Drive

TR609,610
2SC1567
Drive

TR607,608
2SC828
Thermo Compensation

TR605,606
2SC1885
Pre Drive

TR603,604
2SC828
Current Mirror

TR601,602
2SA798A
Differential Amp.

TR701
2SC945
Regulator

SPEAKER CIRCUIT PROTECTION FUSES

SPEAKER TERMINALS

AC LINE
110/120/220/240V

POWER TRANSFORMER (T701)

VOLTAGE SELECTOR

DIAL LAMPS P.C.B.

VOLUME CONTROL

BALANCE CONTROL

TREBLE CONTROL

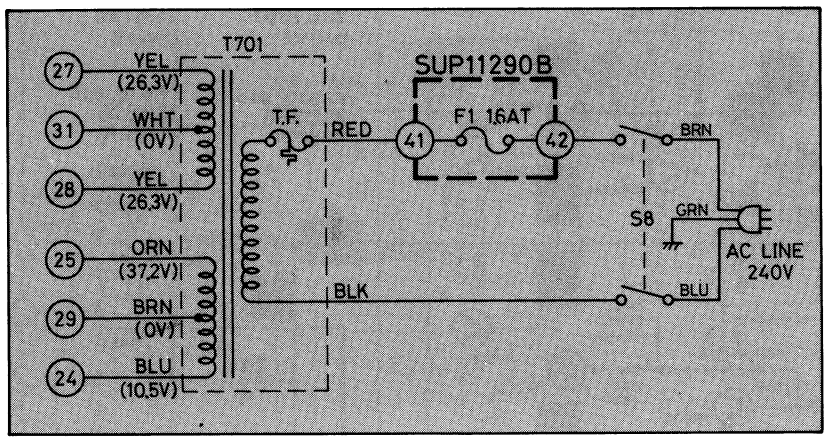
BASS CONTROL

SPEAKERS SWITCH

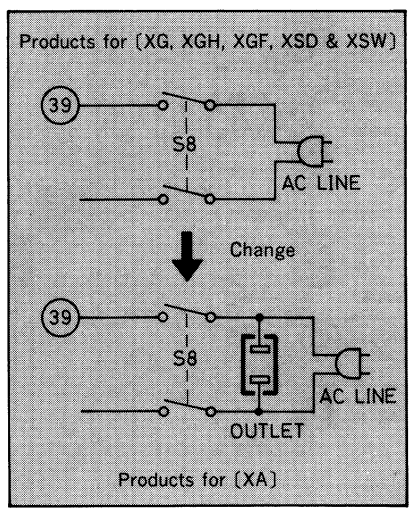
HEADPHONES JACK

■ POWER SOURCE SCHEMATIC DIAGRAM

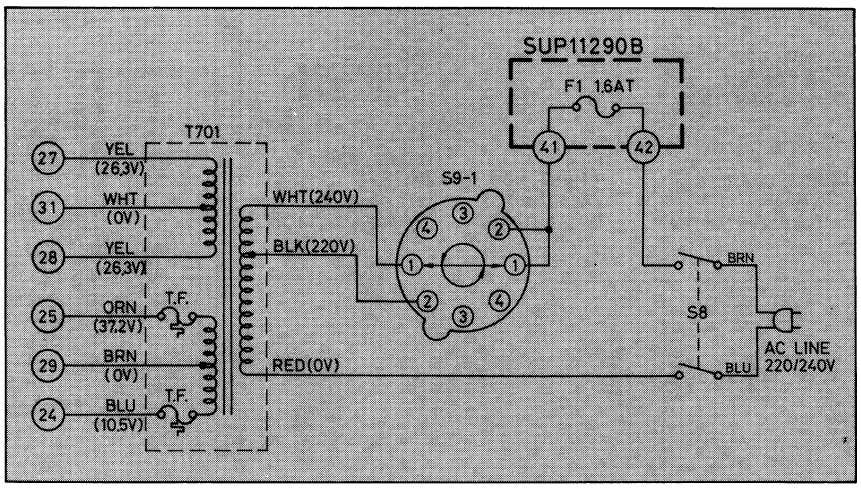
- Products for Australia [XAL] only



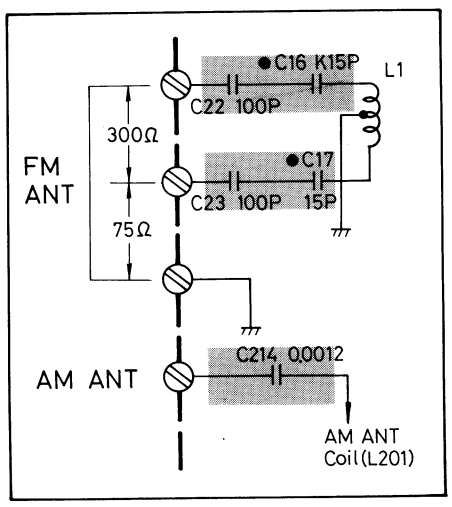
- Products for [XA] only



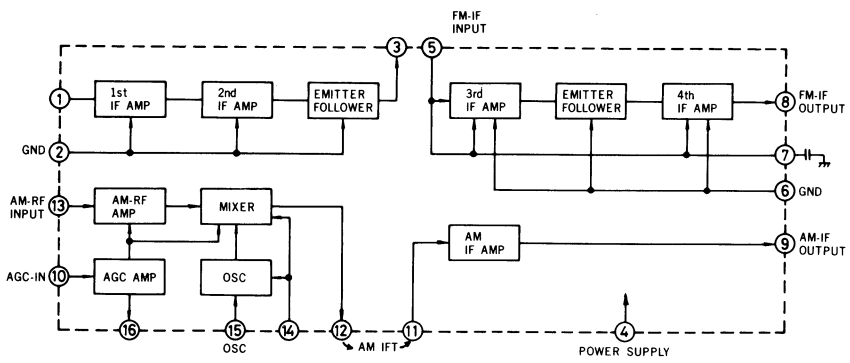
- Products for England [XE] only



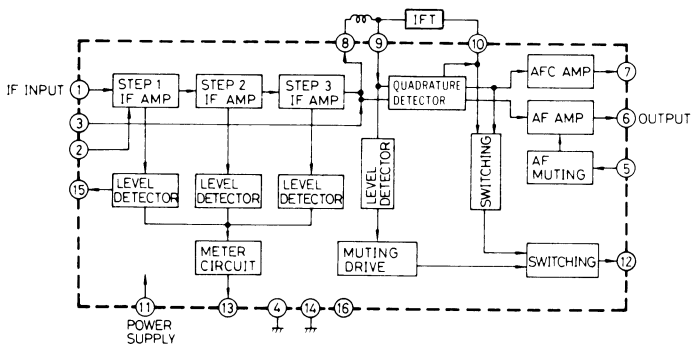
■ ANTENNA CUPPLING CAPACITORS THE PRODUCTS FOR AUSTRALIA (XAL)



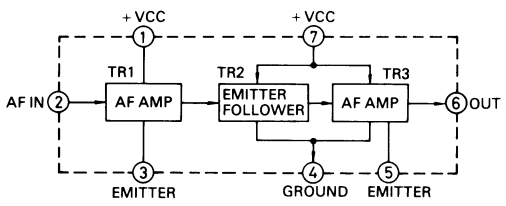
■ BLOCK DIAGRAM OF INTEGRATED CIRCUITS



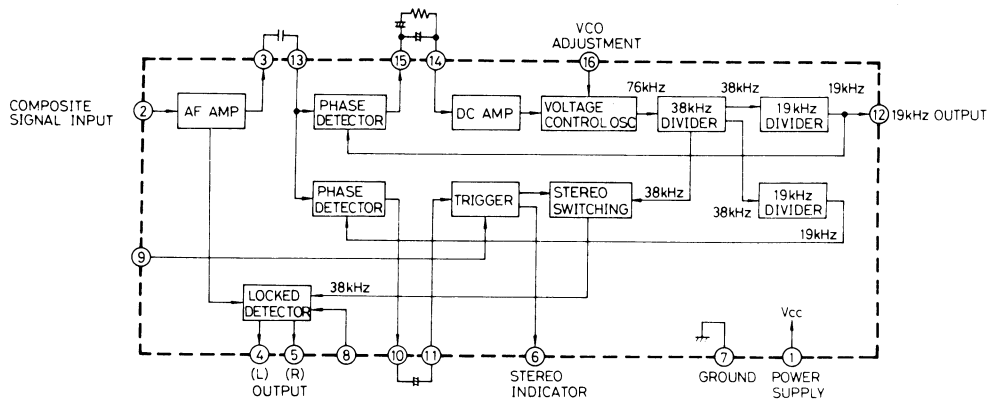
IC101 (AN217)
FM 2 STEPS IF AMPLIFIER & AM CIRCUIT



IC102 (AN377)
FM IF AMPLIFIER & DETECTOR CIRCUIT



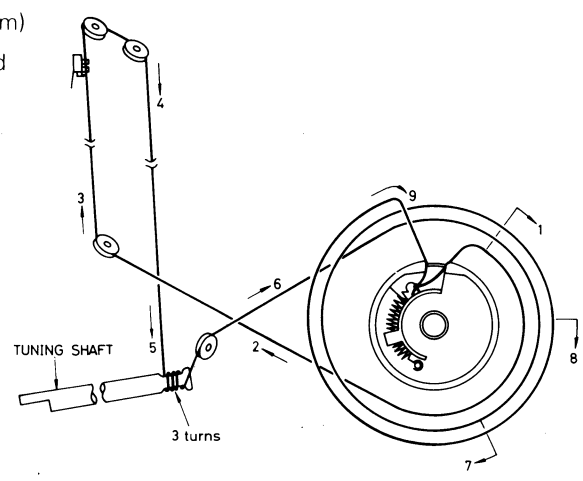
IC401, 402 (SVITA7129P)
EQUALIZER AMPLIFIER CIRCUIT



IC301 (AN363)
PLL FM MULTIPLEX CIRCUIT

■ DIAL CORD INSTALLATION GUIDE

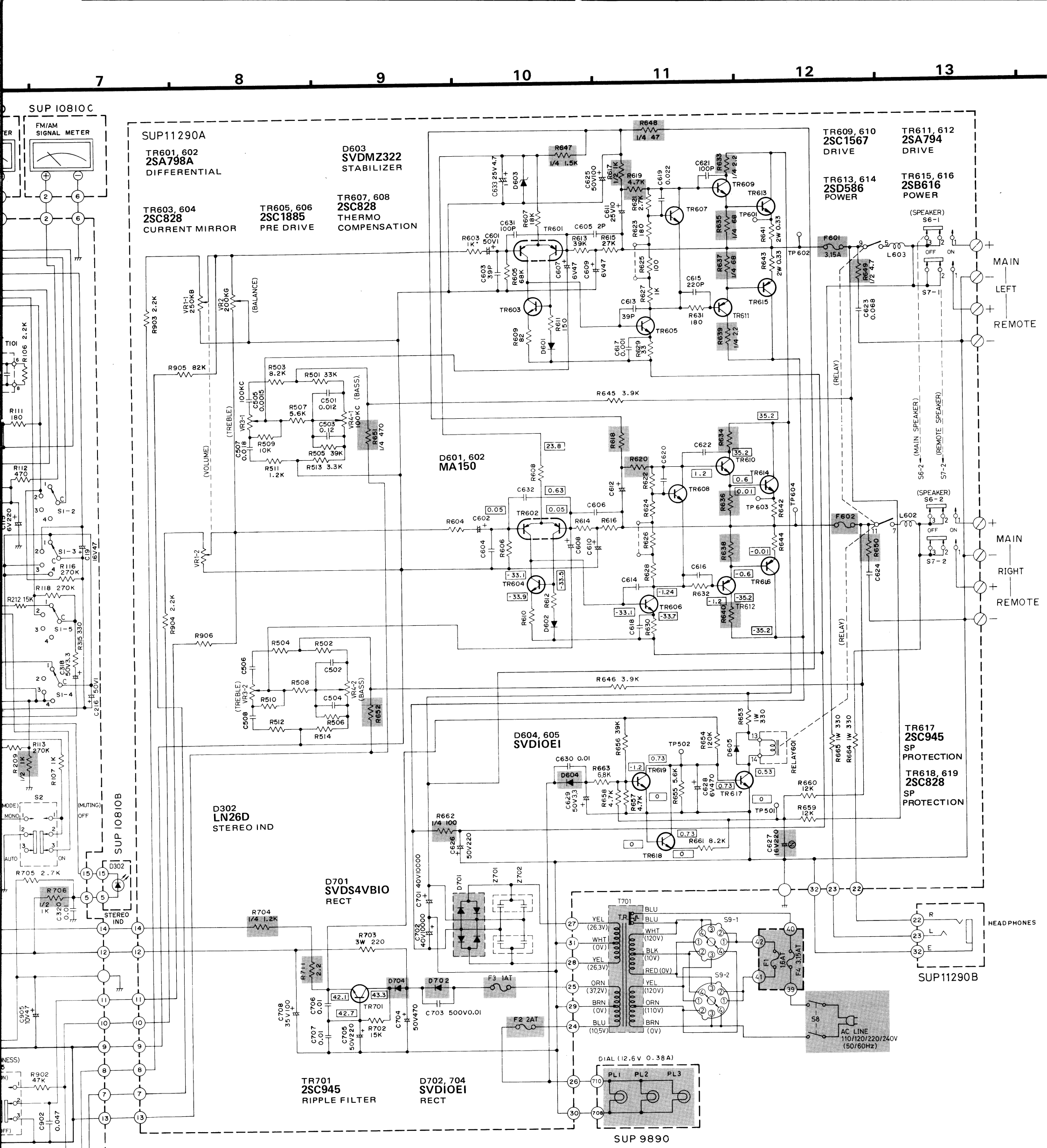
1. Dial cord length is 180cm (70-15/16'').
2. Tuning gang is positioned at maximum capacity. (Frequency is minimum)
3. Arrow marks (1 ~ 9) indicated correct order and direction of stringing dial cord.



Schematic Diagram ..... Model SA-5270/SA-5270K

SA-5270 15

SA-5270 16



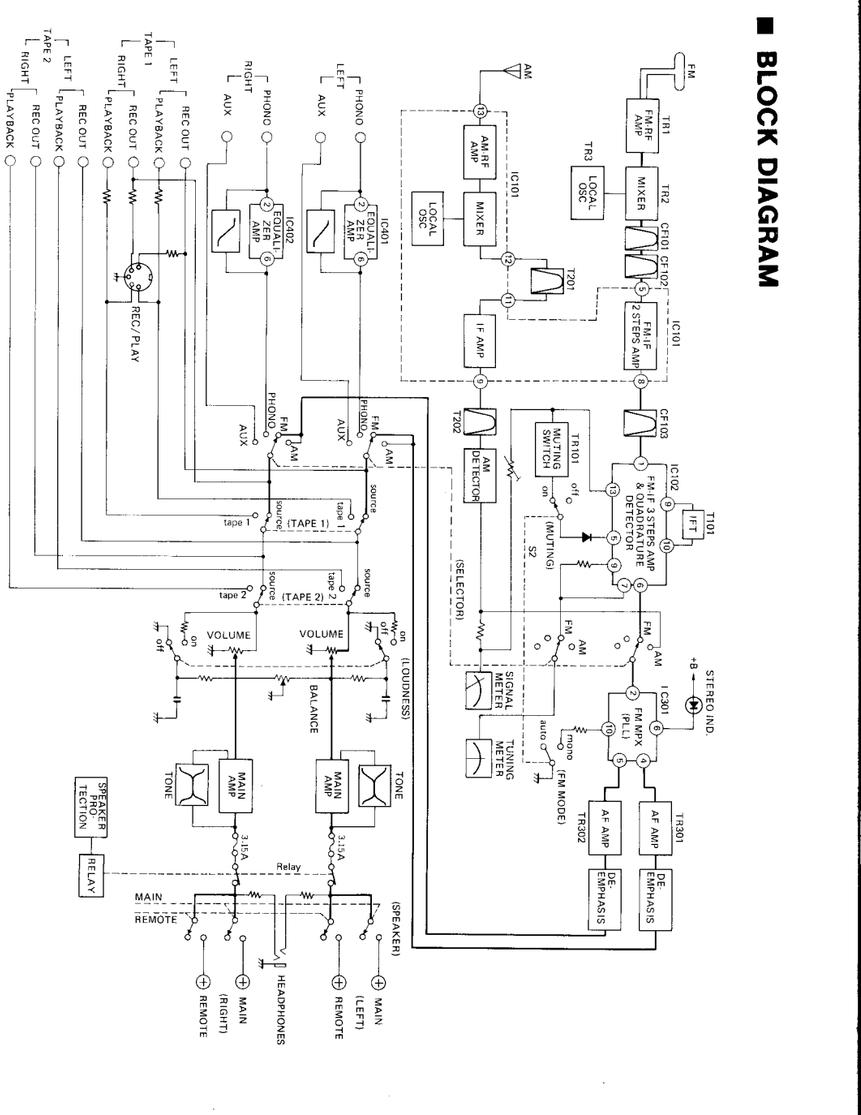
IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR SAFETY. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTUR'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

NOTES:

1. S1-1 ~ S1-6: Selector switch in "AM" position.
   ① AM ↔ ② FM ↔ ③ PHONO ↔ ④ AUX
2. S2: FM muting/FM mode switch in "ON/FM AUTO" position.
3. S3: Tape monitor 1 switch in "SOURCE" position.
4. S4: Tape monitor 2 switch in "SOURCE" position.
5. S5: Loudness switch in "OFF" position.
6. S6-1, S6-2: Main speaker switch in "OFF" position.
7. S7-1, S7-2: Remote speaker switch in "OFF" position.
8. S8: Power source switch in "OFF" position.
9. S9: Voltage selector switch in "110V" position.
   ④ 110V ↔ ③ 120V ↔ ② 220V ↔ ① 240V
10. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
    ▭ FM monoral signal reception.
    ( ) AM position.
    < > FM stereo signal reception.
    ⌜ ⌟ FM muting circuit operating position.
11. This schematic diagram may be modified at any time with development of new technology.

■ BLOCK DIAGRAM



■ SERVICE AID

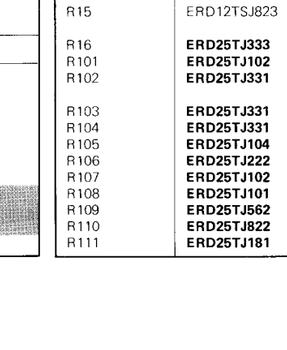
At the initial stage of the main amplifier of this unit, the differential amplifier of current mirror load is employed.

This is a circuit for obtaining the gain higher than that in the conventional circuits, with current in the differential amplifier stage kept constant.

When Ic1 is increased through variation of base voltage of the differential amplifier TR1, Ic2 at TR2 is reduced with consequent decrease in the voltage drop at R2, this in turn reduces VEB of TR3, and thus Ic 1 gradually decreases. On the contrary, when Ic 1 of TR1 is reduced, Ic 2 of TR2 is increased with increase of voltage drop at R2, thus resulting in rise of VEB for TR3 and consequent increase of Ic 1. As the characteristics of the differential amplifier, Ic2 is reduced as Ic 1 is increased. In this way, Ic 1 and Ic 2 are kept constant at all times through functioning of TR3.

Constant current means that high impedance is connected to the differential amplifier circuit, and thus large voltage gain can be obtained. Another cause for increasing the voltage gain is the push-pull circuit formed by TR1 and TR3. In the differential amplifier, signal of opposite phase is obtained at the collector of TR1 with respect to the input signal, while in the collector of TR2, signal of the phase as the input is obtained to be further applied to the base of TR3.

Accordingly, signal of opposite phase to the input is developed at the collector of TR3, thus consequently forming the push-pull circuit of TR1 and TR3. In other words, since the amount of NF can be increased with the rise of the gain, improvements in the distortion factor and S/N ratio can be achieved.



(CURRENT MIRROR CIRCUIT)

Fig. 1

■ REPLACEMENT PARTS LIST

Important Safety Notice

Components identified by shaded area have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

NOTE: 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
INTEGRATED CIRCUITS				
IC101	AN217-BB	IC, FM IF Amplifier & AM Circuit	1	
IC102	AN377	IC, FM IF Amplifier & Detector	1	
IC301	AN363A	IC, PLL Type FM Multiplex	1	
IC401, 402	SVITA7129P	IC, Equalizer Amplifier	2	
TRANSISTORS				
TR1	3SK40-M	Transistor (FET), FM RF Amplifier	1	
TR2	**2SC1047-C**	Transistor, FM Mix (Use in ranks C or D)	1	
TR3	2SC1675-L1	Transistor, FM Oscillator	1	
TR101	**2SC1328-T**	Transistor, Muting Switch (Use in ranks S, T or U)	1	
TR301, 302	**2SA902S-F**	Transistor, AF Amplifier (Use in ranks F or G)	2	
TR601, 602	**2SA798A-G2**	Transistor, Differential Amplifier (Use in ranks F2 or G2)	2	
TR603, 604 618, 619	**2SC1328-T**	Transistor, Current Mirror & Switching (Use in ranks S, T or U)	4	
TR605, 606	2SC1885-R	Transistor, Pre Drive Amplifier (Use in ranks R, Q or S)	2	
TR607, 608	**2SC828A-R**	Transistor, Thermo Compensation	2	
TR609, 610	**2SC1567-Q**	Transistor, Drive Amplifier (Use in ranks P, Q or R)	2	
TR611, 612	**2SA794-Q**	Transistor, Drive Amplifier (Use in ranks P, Q or R) (Use pair ranks as same as TR609, 610, 611 and TR612)	2	
TR613, 614	2SD586-R	Transistor, Power Amplifier (Use in ranks Q, R or S)	2	○
TR615, 616	2SB616-Q	Transistor, Power Amplifier (Use in ranks Q, R or S)	2	○
TR617, 701	**2SC945-R**	Transistor, Relay Drive & Ripple Filter	2	
TR702	**2SC1398-Q**	Transistor, Regulator (Use in ranks P, Q or R)	1	
DIODES				
D101, 104, 204, 301, 601, 602	MA150	Diode, AGC Detector & Current Mirror	6	
D103	SVDKB262E	Diode	1	○
D102, 201, 202 203	OA99	Diode, Switching & Detector	4	
D302	LN26D	Light Emitting Diode, Stereo Indicator	1	
D603	SVDMZ322	Zener Diode, 22V	1	
D604, 605, 702, 704	SVD10E1	Rectifier	4	○
D701	SVDS4VB10	Rectifier	1	○
D703	SVDMZ314	Zener Diode, 14V	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
COILS and TRANSFORMERS				
L1	SLA4P25	Antenna Coil, FM	1	
L3	**RLQY25S2**	Coil, Choke	1	
L4	SLD4P13	Coil, Collector (TR1)	1	○
L5	**RLQY15G5**	Coil, Choke	1	
L6	SLO4P31	Oscillator Coil, FM	1	
L101	**SLQX180-1**	Coil, Choke	1	
L201	SLF2D41	Ferrite Antenna Coil, AM	1	
L202	SLO2C3-P	Oscillator Coil, AM	1	
L601, 602	SLQY15G-3U	Coil, Compensation	2	○
T101	SLI4D513	IFT, FM Discriminator	1	○
T201	SLI7D101-M	IFT, AM 1st (Except set for [XE])	1	
T201 [XE] only	SLI7D103-M	IFT, AM 1st	1	
T202	RLI2C450	IFT, AM 2nd	1	
T701	SLT5Q61-W	Power Transformer, (Except set for [XE] & [XAL])	1	○
T701 [XE] only	SLT5Q63-W	Power Transformer	1	○
T701 [XAL] only	SLT5Q65-W	Power Transformer	1	○
CERAMIC FILTERS				
CF101, 102, 103	SVFE107MA8A	FM IF Circuit, Red, 10.7MHz	each 3	
	SVFE107MA8B	FM IF Circuit, Blue, 10.67MHz		
	SVFE107MA8C	FM IF Circuit, Orange, 10.73MHz		
	SVFE107MA8D	FM IF Circuit, Black, 10.64MHz		
	SVFE107MA8E	FM IF Circuit, White, 10.76MHz		
	(Use pair ranks as same as CF101, 102 and 103)			
RESISTORS				
R 1	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R 2	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R 3	**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ±5%	1	
R 4	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R 5	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R 6	**ERD25TJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R 8	**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%	1	
R 9	**ERD25TJ152**	Carbon, 1.5kΩ, 1/4W, ±5%	1	
R10	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R11	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R12	**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%	1	
R13	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R14	ERD12TSJ823	Carbon, 82kΩ, 1/2W, ±5% (Except set for [XAL])	1	
R15	ERD12TSJ823	Carbon, 82kΩ, 1/2W, ±5% (Except set for [XAL])	1	
R16	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R101	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R102	**ERD25TJ331**	Carbon, 330Ω, 1/4W, ±5%	1	
R103	**ERD25TJ331**	Carbon, 330Ω, 1/4W, ±5%	1	
R104	**ERD25TJ331**	Carbon, 330Ω, 1/4W, ±5%	1	
R105	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R106	**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ±5%	1	
R107	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R108	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R109	**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ±5%	1	
R110	**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ±5%	1	
R111	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R112	**ERD25TJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R113	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R114	**ERD25TJ821**	Carbon, 820Ω, 1/4W, ±5%	1	
R115	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R116	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R117	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R118	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R119	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R120	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R121	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R122	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R201	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R201	**ERD25TJ152**	Carbon, 1.5kΩ, 1/4W, ±5%	1	
R202	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R203	**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ±5%	1	
R204	**ERD25TJ274**	Carbon, 270kΩ, 1/4W, ±5%	1	
R205	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R206	**ERD25TJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R207	**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ±5%	1	
R208	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R209	ERD12FJ102	Carbon, 1kΩ, 1/2W, ±5%	1	
R211	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R212	**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%	1	
R301	**ERD25TJ680**	Carbon, 68Ω, 1/4W, ±5%	1	
R302	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R303	**ERD25TJ152**	Carbon, 1.5kΩ, 1/4W, ±5%	1	
R304	**ERD25TJ152**	Carbon, 1.5kΩ, 1/4W, ±5%	1	
R305	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R306	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R307	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R308	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R309	**ERD25TJ391**	Carbon, 390Ω, 1/4W, ±5%	1	
R310	**ERD25TJ391**	Carbon, 390Ω, 1/4W, ±5%	1	
R311	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R312	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R313	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R314	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R315	**ERD25TJ331**	Carbon, 330Ω, 1/4W, ±5%	1	
R316	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R317	**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%	1	
R318	**ERD25TJ821**	Carbon, 820Ω, 1/4W, ±5%	1	
R319	**ERD25TJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R320	**ERD25TJ120**	Carbon, 12Ω, 1/4W, ±5%	1	
R401	ERD12TSJ124	Carbon, 120kΩ, 1/2W, ±5%	1	
R402	ERD12TSJ124	Carbon, 120kΩ, 1/2W, ±5%	1	
R403	**ERD25TJ561**	Carbon, 560Ω, 1/4W, ±5%	1	
R404	**ERD25TJ561**	Carbon, 560Ω, 1/4W, ±5%	1	
R405	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R406	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R407	**ERD25TJ271**	Carbon, 270Ω, 1/4W, ±5%	1	
R408	**ERD25TJ271**	Carbon, 270Ω, 1/4W, ±5%	1	
R409	ERD12TSJ823	Carbon, 82kΩ, 1/2W, ±5%	1	
R410	ERD12TSJ823	Carbon, 82kΩ, 1/2W, ±5%	1	
R411	**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%	1	
R412	**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%	1	
R413	**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R414	**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%	1	
R415	ERD12TSJ274	Carbon, 270kΩ, 1/2W, ±5%	1	
R416	ERD12TSJ274	Carbon, 270kΩ, 1/2W, ±5%	1	
R417	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R418	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R419	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R420	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R501	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R502	**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%	1	
R503	**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ±5%	1	
R504	**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ±5%	1	
R505	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R506	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R507	**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ±5%	1	
R508	**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ±5%	1	
R509	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R510	**ERD25TJ103**	Carbon, 10kΩ, 1/4W, ±5%	1	
R511	**ERD25TJ122**	Carbon, 1.2kΩ, 1/4W, ±5%	1	
R512	**ERD25TJ122**	Carbon, 1.2kΩ, 1/4W, ±5%	1	
R513	**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ±5%	1	
R514	**ERD25TJ332**	Carbon, 3.3kΩ, 1/4W, ±5%	1	
R603	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R604	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R605	**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ±5%	1	
R606	**ERD25TJ683**	Carbon, 68kΩ, 1/4W, ±5%	1	
R607	**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%	1	
R608	**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%	1	
R609	**ERD25TJ820**	Carbon, 82Ω, 1/4W, ±5%	1	
R610	**ERD25TJ820**	Carbon, 82Ω, 1/4W, ±5%	1	
R611	**ERD25TJ151**	Carbon, 150Ω, 1/4W, ±5%	1	
R612	**ERD25TJ151**	Carbon, 150Ω, 1/4W, ±5%	1	
R613	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R614	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R615	**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ±5%	1	
R616	**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ±5%	1	
R617	ERD12FJ102	Carbon, 1kΩ, 1/2W, ±5%	1	
R618	ERD12FJ102	Carbon, 1kΩ, 1/2W, ±5%	1	
R619	ERD12FJ472	Carbon, 4.7kΩ, 1/2W, ±5%	1	
R620	ERD12FJ472	Carbon, 4.7kΩ, 1/2W, ±5%	1	
R621	**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ±5%	1	
R622	**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ±5%	1	
R623	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R624	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R625	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R626	**ERD25TJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R627	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R628	**ERD25TJ102**	Carbon, 1kΩ, 1/4W, ±5%	1	
R629	**ERD25TJ330**	Carbon, 33Ω, 1/4W, ±5%	1	
R630	**ERD25TJ330**	Carbon, 33Ω, 1/4W, ±5%	1	
R631	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R632	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R633	**ERD14FJ2R2**	Carbon, 2.2Ω, 1/4W, ±5%	1	
R634	**ERD14FJ2R2**	Carbon, 2.2Ω, 1/4W, ±5%	1	
R635	**ERD14FJ680**	Carbon, 68Ω, 1/4W, ±5%	1	
R636	**ERD14FJ680**	Carbon, 68Ω, 1/4W, ±5%	1	

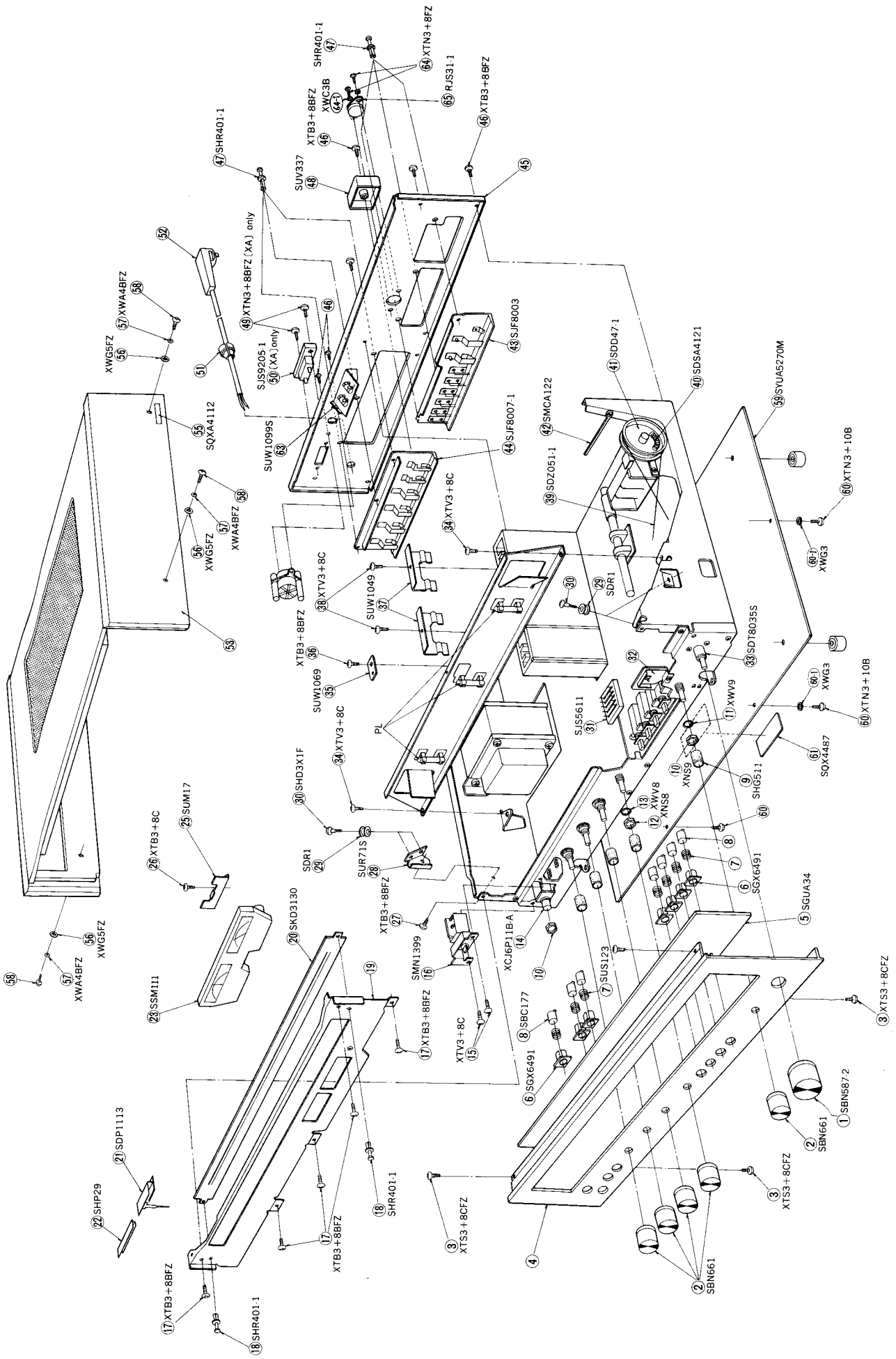
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R637	**ERD14FJ680**	Carbon, 68Ω, 1/4W, ±5%	1	
R638	**ERD25TJ680**	Carbon, 68Ω, 1/4W, ±5%	1	
R639	**ERD14FJ2R2**	Carbon, 2.2Ω, 1/4W, ±5%	1	
R640	**ERD14FJ2R2**	Carbon, 2.2Ω, 1/4W, ±5%	1	
R641	ERX2ANJR33	Metal Film, 0.33Ω, 2W, ±5%	1	
R642	ERX2ANJR33	Metal Film, 0.33Ω, 2W, ±5%	1	
R643	ERX2ANJR33	Metal Film, 0.33Ω, 2W, ±5%	1	
R644	ERX2ANJR33	Metal Film, 0.33Ω, 2W, ±5%	1	
R645	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R646	**ERD25TJ392**	Carbon, 3.9kΩ, 1/4W, ±5%	1	
R647	**ERD14FJ152**	Carbon, 1.5kΩ, 1/4W, ±5%	1	
R648	**ERD14FJ470**	Carbon, 47Ω, 1/4W, ±5%	1	
R649	ERD12FJ4R7	Carbon, 4.7Ω, 1/2W, ±5%	1	
R650	ERD12FJ4R7	Carbon, 4.7Ω, 1/2W, ±5%	1	
R651	**ERD14FJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R652	**ERD14FJ471**	Carbon, 470Ω, 1/4W, ±5%	1	
R653	**ERG1ANJ331**	Metal Film, 330Ω, 1W ±5%	1	
R654	**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%	1	
R655	**ERD25TJ562**	Carbon, 5.6kΩ, 1/4W, ±5%	1	
R565	**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%	1	
R657	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R658	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R659	**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%	1	
R660	**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%	1	
R661	**ERD25TJ822**	Carbon, 8.2kΩ, 1/4W, ±5%	1	
R662	**ERD14FJ101**	Carbon, 100Ω, 1/4W, ±5%	1	
R663	**ERD25TJ682**	Carbon, 6.8kΩ, 1/4W, ±5%	1	
R664	**ERG1ANJ331**	Metal Film, 330Ω, 1W, ±5%	1	
R665	**ERG1ANJ331**	Metal Film, 330Ω, 1W, ±5%	1	
R702	**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%	1	
R703	**ERG3ANJ221**	Metal Film, 220Ω, 3W, ±5%	1	
R704	**ERD14FJ122**	Carbon, 1.2kΩ, 1/4W, ±5%	1	
R705	**ERD25TJ272**	Carbon, 2.7kΩ, 1/4W, ±5%	1	
R706	ERD12FJ102	Carbon, 1kΩ, 1/2W, ±5%	1	
R707	**ERD25TJ120**	Carbon, 12Ω, 1/4W, ±5%	1	
R708	ERD12FJ471	Carbon, 470Ω, 1/2W, ±5%	1	
R709	**ERD25TJ181**	Carbon, 180Ω, 1/4W, ±5%	1	
R711	**ERD18FJ2R2**	Carbon, 2.2Ω, 1/8W, ±5%	1	
R901	**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%	1	
R902	**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%	1	
R903	**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ±5%	1	
R904	**ERD25TJ222**	Carbon, 2.2kΩ, 1/4W, ±5%	1	
R905	**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ±5%	1	
R906	**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ±5%	1	
R907	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R908	**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%	1	
R909	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R910	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R911	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R912	**ERD25TJ472**	Carbon, 4.7kΩ, 1/4W, ±5%	1	
R913	**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ±5%	1	
R914	**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ±5%	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		VARIABLE RESISTORS		
VR1	EWKBJAF25BF5	Volume Control, 250kΩ (B)	1	
VR2	EVHGPAF25G25	Balance Control, 200kΩ (G)	1	
VR3, 4	EWKB9AF25C15	Bass & Treble Control, 100kΩ (C)	2	
VR101	**EVLT0AA00B35**	Muting Level Adjustment, 300kΩ (B)	1	
VR102	**EVLT0AA00B24**	FM meter Adjustment, 20kΩ (B)	1	
VR301	EVTS3MA00B14	PLL VCO Adjustment, 10kΩ (B)	1	
VR302	EVTS3MA00B14	Separation Adjustment, 10kΩ (B)	1	
		CAPACITORS		
C 1	ECCD1H120KC	Ceramic, 12pF, 50V, ±10%	1	
C 2	ECCD1H220KC	Ceramic, 22pF, 50V, ±10%	1	
C 3	ECCD1H180KR	Ceramic, 18pF, 50V, ±10%	1	
C 4	ECKD1H102MDA	Ceramic, 0.001μF, 50V, ±20%	1	
C 5	ECCD1H030CC	Ceramic, 3pF, 50V, ±0.25pF	1	
C 6	ECCD1H181K	Ceramic, 180pF, 50V, ±10%	1	
C 7	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C 8	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C 9	ECCD1H0R5CC	Ceramic, 0.5pF, 50V, ±0.25pF	1	
C10	ECCD1H220KR	Ceramic, 22pF, 50V, ±10%	1	
C11	ECCD1H070DC	Ceramic, 7pF, 50V, ±0.5pF	1	
C12	ECCD1H390KC	Ceramic, 39pF, 50V, ±10%	1	
C13	ECCD1H150KC	Ceramic, 15pF, 50V, ±10%	1	
C14	ECKD1H102PF	Ceramic, 0.001μF, 50V, $^{+100}_{-0}$%	1	
C15	ECCD1H050CC	Ceramic, 5pF, 50V, ±0.25pF	1	
C16	ECCD1H150KC	Ceramic, 15pF, 50V, ±10%	1	
C17	ECCD1H150KC	Ceramic, 15pF, 50V, ±10%	1	
C18	ECKD1H102PF	Ceramic, 0.001μF, 50V, $^{+100}_{-0}$%	1	
C19	ECEA16V47	Electrolytic, 47μF, 16V	1	
C20	ECCD1H030CC	Ceramic, 3pF, 50V, ±0.25pF	1	
C21	ECKD1H102PF	Ceramic, 0.001μF, 50V, $^{+100}_{-0}$%	1	
C22 [XAL] only	ECKDHS101MB	Ceramic, 100pF, 400V, AC, ±20%	1	
C23 [XAL] only	ECKDHS101MB	Ceramic, 100pF, 400V, AC, ±20%	1	
C101	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C102	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C103	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C104	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C105	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C106	ECEA50V3R3	Electrolytic, 3.3μF, 50V	1	
C107	ECCD1H680K	Ceramic, 68pF, 50V, ±10%	1	
C108	ECEA50V1	Electrolytic, 1μF, 50V	1	
C109	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C110	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C111	ECEA16V10	Electrolytic, 10μF, 16V	1	
C112	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C113	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C114	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C115	**ECEA6V220V**	Electrolytic, 220μF, 6.3V	1	
C116	ECEA50VR47	Electrolytic, 0.47μF, 50V	1	
C117	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C201	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C202	ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%	1	
C203	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C204	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	

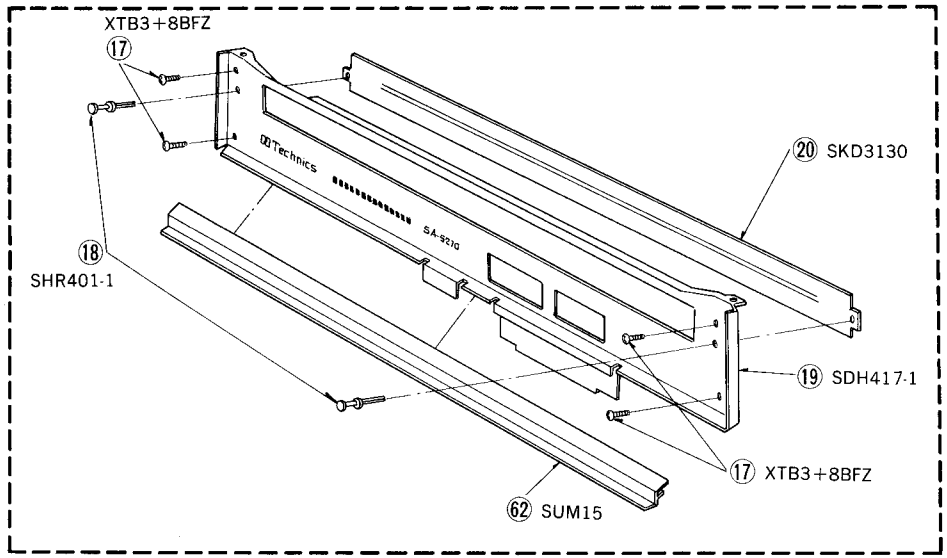
Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C205	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C206	ECEA50V3R3	Electrolytic, 3.3μF, 50V	1	
C207	ECCD1H390KC	Ceramic, 39pF, 50V, ±10%	1	
C208	ECEA50VR47	Electrolytic, 0.47μF, 50V	1	
C209	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C210	ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%	1	
C211	ECQM1H223KZ	Polyester, 0.022μF, 50V, ±10%	1	
C214 (XAL) only	ECKDHS102MD	Ceramic, 0.001μF, 400V, AC, ±20%	1	
C216	ECEA50V1	Electrolytic, 1μF, 50V	1	
C301	ECQM1H333JZ	Polyester, 0.033μF, 50V, ±5%	1	
C302	ECQM1H333JZ	Polyester, 0.033μF, 50V, ±5%	1	
C303	ECQM1H332KZ	Polyester, 0.0033μF, 50V, ±10%	1	
C304	ECQM1H332KZ	Polyester, 0.0033μF, 50V, ±10%	1	
C305	ECKD1H271KB	Ceramic, 270pF, 50V, ±10%	1	
C306	ECKD1H271KB	Ceramic, 270pF, 50V, ±10%	1	
C307	ECQM1H182KZ	Polyester, 0.0018μF, 50V, ±10%	1	
C308	ECQM1H182KZ	Polyester, 0.0018μF, 50V, ±10%	1	
C309	**ECEA50ZR33**	Electrolytic, 0.33μF, 50V	1	
C310	**ECEA50ZR33**	Electrolytic, 0.33μF, 50V	1	
C311	**ECEA16V100V**	Electrolytic, 100μF, 16V	1	
C312	ECEA16V47	Electrolytic, 47μF, 16V	1	
C313	ECEA50M1R	Electrolytic, 1μF, 50V	1	
C314	ECEA50VR47	Electrolytic, 0.47μF, 50V	1	
C315	ECEA50VR47	Electrolytic, 0.47μF, 50V	1	
C316	ECQS05471JZ	Polystyrene, 470pF, 50V, ±5%	1	
C317	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%	1	
C318	ECEA50V3R3	Electrolytic, 3.3μF, 50V	1	
C320	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C321	ECKD1H222PF	Ceramic, 0.0022μF, 50V, $^{+100}_{-0}$%	1	
C401	ECCD1H680K	Ceramic, 68pF, 50V, ±10%	1	
C402	ECCD1H680K	Ceramic, 68pF, 50V, ±10%	1	
C403	ECCD1H151K	Ceramic, 150pF, 50V, ±10%	1	
C404	ECCD1H151K	Ceramic, 150pF, 50V, ±10%	1	
C405	ECEA50M3R3R	Electrolytic, 3.3μF, 50V	1	
C406	ECEA50M3R3R	Electrolytic, 3.3μF, 50V	1	
C407	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C408	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C409	ECEA10V47	Electrolytic, 47μF, 10V	1	
C410	ECEA10V47	Electrolytic, 47μF, 10V	1	
C411	ECQM1H223JZ	Polyester, 0.022μF, 50V, ±5%	1	
C412	ECQM1H223JZ	Polyester, 0.022μF, 50V, ±5%	1	
C413	ECQM1H562JZ	Polyester, 0.0056μF, 50V, ±5%	1	
C414	ECQM1H562JZ	Polyester, 0.0056μF, 50V, ±5%	1	
C415	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C416	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C417	ECEA50MR47R	Electrolytic, 0.47μF, 50V	1	
C418	ECEA50MR47R	Electrolytic, 0.47μF, 50V	1	
C419	**ECEA50V330V**	Electrolytic, 330μF, 50V	1	
C421	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C422	ECKD1H681KB	Ceramic, 680pF, 50V, ±10%	1	
C501	ECQM1H123KZ	Polyester, 0.012μF, 50V, ±10%	1	
C502	ECQM1H123KZ	Polyester, 0.012μF, 50V, ±10%	1	
C503	ECQM1H124KZ	Polyester, 0.12μF, 50V, ±10%	1	
C504	ECQM1H124KZ	Polyester, 0.12μF, 50V, ±10%	1	
C505	ECQM1H152KZ	Polyester, 0.0015μF, 50V, ±10%	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C506	ECQM1H152KZ	Polyester, 0.0015μF, 50V, ±10%	1	
C507	ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%	1	
C508	ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%	1	
C601	ECEA50M1R	Electrolytic, 1μF, 50V	1	
C602	ECEA50M1R	Electrolytic, 1μF, 50V	1	
C603	ECCD1H390K	Ceramic, 39pF, 50V, ±10%	1	
C604	ECCD1H390K	Ceramic, 39pF, 50V, ±10%	1	
C605	ECCD1H020C	Ceramic, 2pF, 50V, ±0.25pF	1	
C606	ECCD1H020C	Ceramic, 2pF, 50V, ±0.25pF	1	
C607	ECEA6V47	Electrolytic, 47μF, 6.3V	1	
C608	ECEA6V47	Electrolytic, 47μF, 6.3V	1	
C609	ECEA6V47	Electrolytic, 47μF, 6.3V	1	
C610	ECEA6V47	Electrolytic, 47μF, 6.3V	1	
C611	ECEA25V10	Electrolytic, 10μF, 25V	1	
C612	ECEA25V10	Electrolytic, 10μF, 25V	1	
C613	ECCD2H390K	Ceramic, 39pF, 500V, ±10%	1	
C614	ECCD2H390K	Ceramic, 39pF, 500V, ±10%	1	
C615	ECKD1H221KB	Ceramic, 220pF, 50V, ±10%	1	
C616	ECKD1H221KB	Ceramic, 220pF, 50V, ±10%	1	
C617	ECKD1H102PF	Ceramic, 0.001μF, 50V, $^{+100}_{-0}$%	1	
C618	ECKD1H102PF	Ceramic, 0.001μF, 50V, $^{+100}_{-0}$%	1	
C619	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C620	ECKD1H223PF	Ceramic, 0.022μF, 50V, $^{+100}_{-0}$%	1	
C621	ECCD2H101K	Ceramic, 100pF, 500V, ±10%	1	
C622	ECCD2H101K	Ceramic, 100pF, 500V, ±10%	1	
C623	ECQM1H683KZ	Polyester, 0.068μF, 50V, ±10%	1	
C624	ECQM1H683KZ	Polyester, 0.068μF, 50V, ±10%	1	
C625	**ECEA50V100V**	Electrolytic, 100μF, 50V	1	
C626	**ECEA50V220V**	Electrolytic, 220μF, 50V	1	
C627	**ECEA16N220V**	Non-Polar Electrolytic, 220μF, 16V	1	
C628	**ECEA6V470V**	Electrolytic, 470μF, 6.3V	1	
C629	**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V	1	
C630	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C631	ECCD1H101K	Ceramic, 100pF, 50V, ±10%	1	
C632	ECCD1H101K	Ceramic, 100pF, 50V, ±10%	1	
C633	ECEA25V4R7	Electrolytic, 4.7μF, 25V	1	
C701	ECET40R103Y	Electrolytic, 10000μF, 40V	1	
C702	ECET40R103Y	Electrolytic, 10000μF, 40V	1	
C703	ECKD2H103PF	Ceramic, 0.01μF, 500V, $^{+100}_{-0}$%	1	
C704	**ECEA50V470V**	Electrolytic, 470μF, 50V	1	
C705	**ECEA50V220V**	Electrolytic, 220μF, 50V	1	
C706	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C707	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C708	**ECEA35V100V**	Electrolytic, 100μF, 35V	1	
C709	**ECEA16V100V**	Electrolytic, 100μF, 16V	1	
C710	ECKD1H103PF	Ceramic, 0.01μF, 50V, $^{+100}_{-0}$%	1	
C901	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%	1	
C902	ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%	1	
C905	ECEA10V47	Electrolytic, 47μF, 10V	1	
C906	ECEA50V1	Electrolytic, 1μF, 50V	1	
VARIABLE CAPACITOR				
CV1 ~ 5 (CT1 ~ 5)	ECVC751K144A	Tuning Capacitor, w/Trimmer	1	O

■ EXPLODED VIEWS



Available in [XG, XGH, XGF, XSD, XSW, XE]



Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		LAMPS		
PL1, 2, 3	XAMR54T	Lamp, Dial Light (12.6V 0.38A)	3	
		FUSES		
F1	XBA2C16TRO	Fuse, 1.6AT (250V)	1	
F2	XBA2C20TRO	Fuse, 2AT (250V)	1	
F3	XBA2C10TRO	Fuse, 1AT (250V)	1	
F4	XBA2C31TRO	Fuse, 3.15AT (250V) (Except set for [XE] & [XAL])	1	
F601, 602	XBA2C31SSO	Fuse, 3.15A (250V) Circuit Protection	2	
		SWITCHES		
S1	SSR67	Switch, Selector	1	O
S2, 3, 4, 5	SSH413S	Switch, Muting, Tape 1,2, and Loudness	1	O
S6, 7	SSH223S	Switch, Main & Remote Speaker	1	
S8	ESB7075	Switch, Power Source (Except set for [XAL])	1	
S8 [XAL] only	ESB7083	Switch, Power Source	1	
S9	SSR53S	Switch, Voltage Adjuster (Except set for [XE] & [XAL])	1	
S9 [XE] only	SSR53-1S	Switch, Voltage Adjuster	1	
		RELAY		
RELAY 601	SSY19-2	Relay, Speaker Protection	1	O
		COMPONENT COMBINATIONS		
Z701, 702	RXAF103P22HD	Component Combination, 0.01μF (X2)	2	
		CABINET and CHASSIS PARTS		
1	SBN587-2	Knob, Tuning Control	1	
2	SBN661	Knob, Bass, Treble, Balance, Volume Control & Selector Switch	5	
3	XTS3+8CFZ	Screw, Front Panel M'tg	4	
4[XA,XAL] only	SGW8190	Panel, Front	1	O
4	SGW70A	Panel, Front (Except set for [XA] & [XAL])	1	O
5	SGUA34	Glass Plate, Front Panel	1	
6	SGX6491	Escutcheon, Push Switch Button	7	
7	SUS123	Spring, Push Switch Button	7	
8	SBC177	Button, Push Switch	7	
9	SHG511	Bracket, Volume Shaft	5	
10	XNS9	Nut, Headphones Jack & Selector Switch	2	
11	XWV9	Washer (Spring), Selector Switch	1	
12	XNS8	Nut, Tone, Balance, Volume Control	4	
13	XWV8	Washer (Spring), Tone, Balance & Volume Control	4	
14	XCJ6P11B-A	Jack, Headphones	1	
15	XTV3+8C	Screw, Power Switch Bracket M'tg	2	
16	SMN1399	Bracket, Power Switch	1	*
17	XTB3+8BFZ	Screw, Dial Light Plate M'tg	5	
18	SHR401-1	Lock Pin, Dial Scale	2	
19[XA,XAL] only	SDH389-3	Plate, Dial Light	1	* O
19	SDH417-1	Plate, Dial Light (Except set for [XA] & [XAL])	1	* O

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
20	SKD3130	Scale, Dial	1	*
21	SDP1113	Pointer, Dial	1	*
22	SHP29	Paper, Pointer Slide	1	
23	SSM111	Meter, Tuning & Signal	1	
25	SUM17	Bracket, Meter	1	* ○
26	XTB3+6C	Screw, Meter Bracket M'tg	1	
27	XTB3+8BFZ	Screw, Pulley Bracket M'tg	1	
28	SUR71S	Bracket, Pulley	1	
29	SDR1	Pulley, Dial	4	
30	SHD3XIF	Screw, Pulley M'tg	4	
31	SJS5611	Connector, 6 pin	1	
32 [XA, XAL] only	SMN1401	Bracket, Light Emitting Diode	1	*
32	SMN1511	Bracket, L.E.D. (Except set for [XA] & [XAL])	1	* ○
33	SDT8035S	Shaft, Tuning Control Ass'y	1	*
34	XTV3+8C	Screw, Reflector Plate M'tg	2	
35	SUW1069	Bracket, Reflector Plate	1	*
36	XTB3+8BFZ	Screw, Reflector Plate Bracket M'tg	1	
37	SUW1049	Bracket, Power Transistor	2	*
38	XTV3+8C	Screw, Power Transistor Bracket M'tg	2	
39	SDZ051-1	Cord, Dial 70-15/16" (180cm)	1 roll	
40	SDSA4121	Spring, Dial Cord	1	
41	SDD47-1	Drum, Dial Cord	1	
42	SMCA122	Clamp, Lead Wire	1	*
43	SJF8003	Terminal, Inputs & Antennas	1	○
44	SJF8007-1	Terminal, Speaker	1	○
45 [XA]	SGP590-1A	Rear Panel	1	○
45 [XG, XGH, XGF]	SGP790A	Rear Panel	1	○
45 [XAL]	SGPA5270L	Rear Panel, SGP590-2A with Name Plate (SGT13970)	1	○
45 [XE]	SGPA5270E	Rear Panel, SGP790A with Name Plate (SGT13890)	1	○
45 [XSD, XSW]	SGPA5270D	Rear Panel, SGP790A with Name Plate (SGT13930)	1	○
46	XTB3+8BFZ	Screw, Rear Panel, Fuse Cover Voltage Adjuster Switch M'tg	10	
47	SHR401-1	Lock pin, Input, Antenna & Speaker Terminal	6	
48	SUV337	Cover, Circuit Protection Fuses	1	*
49 [XA] only	XTN3+8BFZ	Screw, AC Outlet Socket M'tg	2	
50 [XA] only	SJS9205-1	Socket, AC Outlet	1	
51	SHR127	Bushing, AC Cord (Except set for [XE] & [XAL])	1	
51 [XE] only	SHR129	Bushing, AC Cord	1	
51 [XAL] only	SHR131	Bushing, AC Cord	1	
52 [XA, XG, XGF]	SJA95	AC Cord, with Plug	1	
52 [XGH, XSD]	SJA81	AC Cord, with Plug	1	
52 [XSW]	SJA68	AC Cord, with Plug	1	
52 [XE]	SJA99	AC Cord	1	
52 [XAL]	SJA79	AC Cord, with 3 pin Plug	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
53 [XA, XAL]	SKA9050W	Cabinet, Brown	1	○
53 [XG, XGH, XSW]	SKA9330W	Cabinet, Black	1	○
53 [XSD, XSW]	SKA9350W	Cabinet, Black	1	○
53 [XE]	SKA9351W	Cabinet, Brown	1	○
55	SQXA4112	Caution Label, Cabinet Screw (Except set for [XAL])	1	
56	XWG5FZ	Washer, Cabinet Screw	4	
57	XWA4BFZ	Washer Spring, Cabinet Screw	4	
58 [XA, XAL] only	XTB4+35FFZ	Screw, Cabinet M'tg	4	
58	XTB4+12FFZ	Screw, Cabinet M'tg (Except set for [XA] & [XAL])	4	
59	SYUA5270M	Bottom Board with feet Ass'y	1	* ○
60	XTN3+10B	Screw, Bottom Board M'tg	8	
60-1	XWG3	Washer, Bottom Board Screw	8	
61	SQX4487	Caution Label, Bottom Board	1	
62	SUM15	Cover, Dial Light Plate (Except set for [XA, XAL])	1	
63	SUM1099S	Bracket, Speaker Fuse Printed Circuit Board	1	
64	XTN3+8FZ	Screw, DIN Socket M'tg	2	
64-1	XWC3B	Washer, DIN Socket Screw	2	
65	RJS31-1	Socket, Tape Deck Connection (DIN)	1	

ACCESSORIES

A1	SSA251	Cord, FM Feeder Antenna	1	
A2	XBA2C31SSO	Fuse, 3.15A (250V), Sp. Circuit Protection	2	
A3	RJP5	Pin Plug	4	
A4 [XA] only	SJP5213	Plug Adapter, AC Power	1	

PACKING PARTS

P1 [XA, XAL] only	SPP511	Polyethylene Bag	1	
P1	SPP495	Polyethylene Bag (Except set for [XA] & [XAL])	1	
P2 [XA, XAL] only	SPS893	Pad, Left Upper	1	
P2	SPS1039	Pad, Left Upper (Except set for [XA] & [XAL])	1	
P3 [XA, XAL] only	SPS891	Pad, Left Lower	1	
P3 [XG, XE, XGF]	SPS1045	Pad, Left Lower	1	
P3 [XGH, XSD, XSW]	SPS1037	Pad, Left Lower	1	
P4 [XA, XAL]	SPS897	Pad, Right Upper	1	
P4	SPS1043	Pad, Right Upper (Except set for [XA] & [XAL])	1	
P5 [XA, XAL]	SPS895	Pad, Right Lower	1	
P5 [XG, XE, XGF]	SPS1047	Pad, Right Lower	1	
P5 [XGH, XSD, XSW]	SPS1041	Pad, Right Lower	1	
P6 [XAL] only	SPS1049	Pad, Bottom Side	1	
P7 [XA]	SPG1115	Carton Box	1	○
P7 [XAL]	SPG1117	Carton Box	1	○
P7 [XG]	SPG1119	Carton Box	1	○

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
P7 [XGF]	SPG1121	Carton Box	1	O
P7 [XE]	SPG1123	Carton Box	1	O
P7 [XGH]	SPG1125	Carton Box	1	O
P7 [XSD, XSW]	SPG1127	Carton Box	1	O
P8 [XA]	SQF1611	Instructions Book, (Printed Matter)	1	O
P8 [XAL]	SQF1613	Instructions Book, (Printed Matter)	1	O
P8	SQF1607	Instructions Book, (Printed Matter) (Except set for [XA] & [XAL])	1	O

NOTE;
* The model [XA] is available in Asia, Latin America, Middle East and Africa only.
* The model [XAL] is available in Australia only.
* The model [XE] is available in England only.
* The model [XGF] is available in France only.
* The model [XSW] is available in Switzerland only.
* The model [XGH] is available in European only.
* The model [XSD] is available in Scandinavia only.

SA-5270K

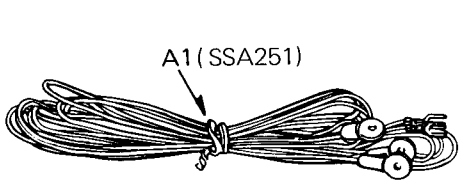
(XG), (XGH),(XGF),(XSD), (XSW)

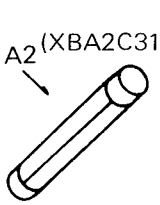
* This parts list includes only the changes of the SA-5270 (XG), (XGH), (XGF), (XSD), (XSW) parts list.
* When servicing model SA-5270K, this parts list and SA-5270 (XG), (XGH), (XGF), (XSD), (XSW) parts list should be used together.

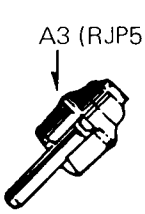
■ CHANGE OF PARTS FROM SA-5270 (XG, XGH, XGF, XSD and XSW)

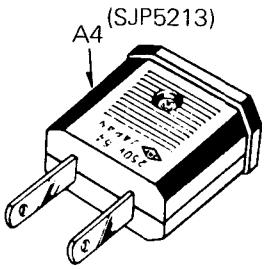
Ref. No.	Change of Part No. SA-5270 → SA-5270K		Part Name & Description	Per Set	Remarks
Transformer					
T701	SLT5Q61-W SLT5Q63-W [XE] SLT5Q65-W [XAL]	SLT5Q61-W	Power Transformer	1	
Switches					
S8	ESB7075 ESB7083 [XAL]	ESB7075	Switch, Power Source	1	
S9	SSR53S SSR53-1S [XE]	SSR53S	Switch, Voltage Selector	1	
Cabinet and Chassis Parts					
1	SBN587-2	SBN587-1	Knob, Tuning Control	1	
2	SBN661	SBN589	Knob, Bass, Treble, Balance, Volume & Selector	5	
4	SGW70A SGW8190 [XA, XAL]	SGW70B	Panel, Front (Black)	1	O
19	SDH417-1 SDH389-3 [XA, XAL]	SDH417-2	Plate, Dial Light (Model Name Printed Plate)	1	*O
32	SMN1511 SMN1401 [XA, XAL]	SMN1511	Bracket, Light Emitting Diode	1	*
45	SGP590-1A [XA] SGP790A [XG, XGH, XGF]	SGP790B [XG, XGH, XGF]	Rear Panel (Products for [XG], [XGH] and [XGF] only)	1	O
	SGPA5270L [XAL] SGPA5270E [XE] SGPA5270D [XSD, XSW]	SGPA5270KD [XSD, XSW]	Rear Panel, SGP790B with Name Plate (SGT 14770) (Products for [XSD] and [XSW] only)	1	O
51	SHR127 SHR129 [XE] SHR131 [XAL]	SHR127	Bushing, AC Cord	1	
52	SJA95 [XA, XG, XGF] SJA81 [XGH, XSD] **SJA68** [XSW] SJA99 [XE] SJA79 [XAL]	SJA95 [XG, XGF]	AC Cord, Power Source (Products for [XG] and [XGF] only)	1	
		SJA81 [XGH, XSD]	AC Cord, Power Source (Products for [XGH] and [XSD] only)	1	
		SJA68 [XSW]	AC Cord, Power Source (Product for [XSW] only)	1	
53	SKA9050W [XA, XAL] SKA9330W [XG, XGH]	SKA9330W [XG, XGH, XGF]	Cabinet (Products for [XG], [XGH] and [XGF] only)	1	
	SKA9350W [XSD, XSW] SKA9351W [XE]	SKA9350W [XSD, XSW]	Cabinet (Products for [XSD] and [XSW] only)	1	
58	XTB4+12FFZ XTB4+35FFZ [XA, XAL]	XTB4+12FFZ	Screw, Cabinet M'tg	4	

■ ACCESSORIES



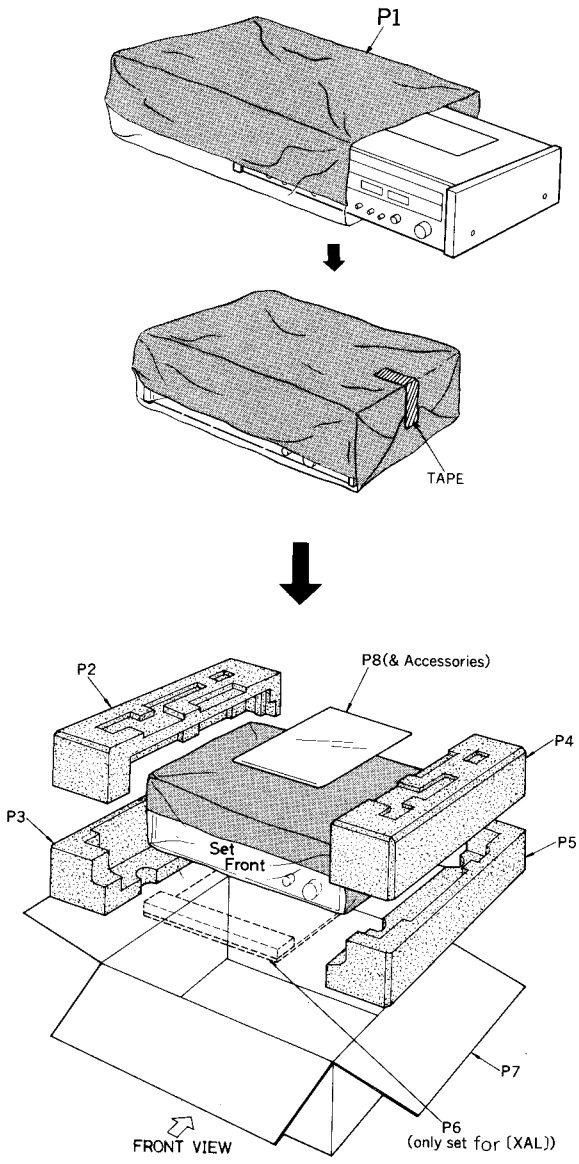






Only set for [XA]

■ PACKINGS



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